CONTENT ANALYSIS OF TEACHERTUBE AND YOUTUBE VIDEOS FOR INSTRUCTING ENGLISH LANGUAGE LEARNERS

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ABSTRACT

The purpose of this content analysis was to examine the content and design quality of videos providing instructional strategies for English language learner (ELL) teachers on TeacherTube and YouTube. Videos were rated for quality using a researcher-developed codebook for content and instructional design quality. The Language Instruction Educational Program (LIEP) report published by the US Department of Education (2012) and a framework and rubric for assessing instructional videos (Morain & Swarts, 2012) were used to develop the codebook. User ratings were equivalent to the number of views each video received. The user and quality ratings of each video were correlated to see if TeacherTube and YouTube users were able to apply algorithmic aspects of self-regulated learning to select and rank videos with high quality content and instructional design. This study may be helpful to districts, schools, and teachers interested in professional development resources. As teachers rely more on online resources for professional development, the information may improve our understanding about the ability of self-directed learners to select quality resources while using Internet resources for self-directed professional development.

Findings indicated that the videos content was somewhat aligned with ELL strategies recommended in the LIEP report but not all content strategies were equally addressed. The videos had moderate to high design quality ratings, with YouTube scores generally higher than TeacherTube. Videos with better content were more likely to have better design quality, and number of user views was positively correlated with design quality, particularly affective design. However, user ratings were negatively correlated with two content areas, scaffolding

and vocabulary. As teachers rely more on online resources for professional development, the information may improve our understanding about the ability of self-directed learners to select quality resources while using Internet resources for self-directed professional development.

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CHAPTER 1. INTRODUCTION

Information is everywhere and easy to access because of mobile technology and the Internet. However, it is not always easy to distinguish what information is reliable in informing personal practice and it can be risky to adopt, especially when that information suggests change. Knowing more about the reliability of information on the Internet can be helpful, especially when that information has the potential to provide solutions for communities and individuals. Supporting a growing population of English language learners (ELLs) is one such task that could use new solutions. Accessible tools and information can prove to be valuable assets as schools and teachers seek ways to support ELLs in the classroom. Equally important is having a better understanding of distinguishing reliable information found on the Internet. This study attempted to address both of these issues.

Statement of the Problem

The percentage of public school students in the United States who were English language learners was 9.1 percent in school year 2011–12, or an estimated 4.4 million students, growing from 2002–03 when it was 8.7 percent, or an estimated 4.1 million students (National Center for Education Statistics, 2014). While learning concepts in a foreign language is difficult enough, increased standardization and focus on strong literacy skills in America's public classrooms (Achieve, 2013) create additional obstacles to academic success for ELLs and those who teach them.

Efforts to address this demographic change nationally came in the form of laws and standards set forth by the government. Title I of the reauthorized Elementary and Secondary Education Act (ESEA) called the Every Student Succeeds Act (ESSA) continues to require instruction of limited English proficient (LEP) and immigrant students, extending mandates to identify and assess LEP students for entry and exit in such language instruction programs (2015). Title I's first purpose is to "provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps" (ESSA, 2015). Furthermore, Title III authorizes funding "to help ensure that English learners, including

immigrant children and youth, attain English proficiency and develop high levels of academic achievement in English" (ESSA, 2015).

Still an achievement gap between non-ELLs and ELLs persists. In math, non-ELL students outperformed their ELL counterparts 25 points at the 4th grade level and 41 points at the 8th grade level on a 500 point assessment (Kena, Aud, Johnson, Wang, Zhang, Rathbun, Wilkinson-Flicker, & Kristapovich, 2014). In reading, the achievement gap was 38 points at the 4th grade level and 45 at the 8th grade level (Kena et al., 2014). These scores have not differed too much in ELL performance since 1996 (Kena et al., 2014). This suggests that a 20-year effort of improvements and supports for ELLs has not yet yielded substantial positive outcomes.

In 2012, the United States Department of Education produced a literature review using 173 other protocol selected literature reviews, expert opinions, studies, and reports on language instruction education programs in America to address the ESEA Title III mandates; predecessor to the ESSA Title I and III mandates (U.S. Department of Education, 2012). The Language Instruction Educational Programs Report, referred to as the LIEP report, answered six main questions regarding second language acquisition theory, models for teaching English as a second language, the role of school and community culture in second language learning, instructional practices for teaching English as a second language, and more (U.S. Department of Education, 2012). This report, specifically the section on instructional practices for teaching English as a second language, provides information to help teachers improve their instruction and support ELLs for success.

Teachers, schools, and districts must work together to comply with national law and help these children meet standards. Professional development, collaboration, and teacher education programs are all vehicles whereby instructional techniques can be improved and reflective practice can take place to ensure greater ELL success. Ensuring success for ELLs is a complex process of networking and commitment that requires specific conditions for which there is no one-size-fits-all solution. Teachers must not only have knowledge of ELL instructional strategies, but a genuine desire to help ELLs succeed (Garcia, Arias, Murri, & Serna, 2010; Good, Masewicz, & Vogel, 2010; Webster & Valeo, 2011). School administration and districts, too must show commitment to supporting teachers by providing professional development and creating school structures that reward efforts to collaborate and improve performance instructing

ELLs (Brancard & Quinnwilliams, 2012; Martin-Beltran & Peercy, 2012; Pawan & Ortloff, 2011; Russell, 2012; Short & Boyson, 2012; Verplaetse, Ferraro, & Anderberg, 2012; Walker, 2012). Individual teachers committed to quality education for ELLs research on their own in efforts to improve their instruction with such students. Finding an accessible resource for knowledge about ELL instructional best practices could be a viable solution for teachers committed to improvement. Where might teachers find such an accessible and reliable resource?

Aside from standardized learning and increasing numbers of ELLs in public schools, another growing trend in America and worldwide is using the internet to gather information. From massively online open courses to blended learning, the use of the Internet to learn has increased (Bouchard, 2011; Duncan-Howell, 2010; Roy, 2013). People may look to websites such as YouTube as a place to learn. Over six billion hours of YouTube are watched a month and 100 hours of video are uploaded every minute (YouTube, 2014b). Users mostly watch music videos on YouTube, but it also is a source for learning how to solve every day problems through YouTube channels, such as instructional videos on fixing household items (ExpertVillage) or creating things (VidStatsX, 2014). A "more educationally focused, safe venue for teachers, schools, and home learners" is TeacherTube (2015a). TeacherTube is a resource individuals can use to gain knowledge that could potentially help teachers improve their instructional practice for ELLs.

Teachers who seek out videos on TeacherTube and YouTube may be called self-directed learners. In such an information-saturated environment (Bouchard, 2011), how much confidence can such self-directed learners have in the quality of resources available for use? Investigating the credibility of ELL strategies shared on TeacherTube and YouTube could help us better understand the extent to which teachers, schools, or other individuals might rely on such information to enhance their professional development and knowledge. Schools, districts, and teachers could benefit from this information and possibly use the website for their own professional development. It is also important to better understand how well user selection and review of these resources are aligned with external ratings of both content and multimedia design quality. Are teachers or other TeacherTube and YouTube viewers, as self-directed learners, able to discern videos with high quality content and design?

Paul Bouchard (2009a, 2009b) elaborated on self-directed learning to show that there are multiple dimensions of learner control; that individuals have both formal processes and environmental factors making up their overall experience. His theory recognizes four areas in which an individual has control over his or her learning experience: conative (focusing on drive and motivation), algorithmic (focused on sequence, pacing, goal setting, finding and evaluating learning resources), economy (focusing on personal gain versus possible cost), and semantic (focused on navigating the information landscape). Of interest here is the algorithmic (finding and evaluating learning resources) area and how well aligned self-directed learner evaluation of information is with external quality ratings of the information source.

Purpose

The purpose of this content analysis was to examine content and design quality of TeacherTube and YouTube videos about ELL instruction in a K-12 classroom and identify possible relationships between the number of views videos received and their content and instructional design quality ratings based on the United States LIEP report and Morain and Swarts' (2012) rubric for assessing instructional video.

Research Questions

The following were the research questions for this study:

1. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms align with ELL strategies described in the United States LIEP report (2012) (Content Quality of Videos - CQ)?
2. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms exhibit high quality ratings using the Morain and Swarts (2012) instructional video assessment rubric (Instructional Design Quality - IDQ)?
3. How do self-directed teacher learners rate selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms (User Ratings – UR)?
4. What is the relationship between the video user ratings (UR) and the video quality ratings (CQ and IDQ) as a measure of the algorithmic aspect for self-directed learners?

Significance of the Study

This study may be beneficial for any individuals, including but not limited to teachers, schools, and districts in America, seeking to improve language instruction educational programs and practices for ELLs. According to the LIEP report, "all teachers should be prepared with a basic understanding of…what practices will help these students to succeed academically. This knowledge may make a nontrivial difference in these students' chances at success [and] should begin in pre-service training and carry through teachers' careers as an ongoing professional development process" (U.S. Department of Education, 2012, p.109). Examining the alignment of instructional practices outlined in the LIEP report for teaching English as a second language with TeacherTube and YouTube videos provides information on whether or not TeacherTube or YouTube might be reliable tools for teachers to gain a basic understanding of practices that could help ELLs succeed academically. Teachers, schools, and districts in America or individuals anywhere with an interest in supporting ELLs can use this information to educate themselves and others on the sufficiency of such tools to improve instructional practices. Pre-service programs might also be able to incorporate such information into teacher training.

Also, knowing whether or not self-directed learners choose quality videos on such video sharing sites may prove useful in the educational technology field, where self-directed learning and open online resources for information abound. This study contributes to understanding how teachers or other users, as self-directed learners, are able to apply the algorithmic aspect to select effective online resources for learning about teaching ELLs (TeacherTube and YouTube video ratings and views). Effective ELL video resources are defined as those in which (a) content is aligned with expert recommendations (LIEP report), and (b) design is aligned with characteristics identified by Morain and Swarts (2012).

Conceptual Framework

The conceptual framework for this study was centered on Bouchard's Four Areas of Learner Autonomy (2009a, 2009b). According to Bouchard's model, self-directed learners have control over how they evaluate and find resources for learning most effective in achieving their educational goals, which is the algorithmic aspect of self-directed learning (2009a, 2009b).

Paul Bouchard (2009a, 2009b) elaborated further on self-directed learning to show that there are four areas of learner autonomy; that individuals have both formal processes and environmental factors making up their overall experience. The first area is conative, or psychological, where individuals control their drive, motivation, initiative, and confidence (Bouchard, 2009a, 2009b). The second area, algorithmic, has to do with the pedagogical aspects over which an individual has control over their learning, such as sequencing, pacing, goal setting, evaluation of progress and resources for learning, and final evaluation and preparation for validation (Bouchard, 2009a, 2009b). Third, the semantic, concerns how learners navigate different information landscapes and collect and use information gathered (Bouchard, 2009a, 2009b). Lastly, the fourth area of learner control is economy, the perceived or actual value of learning, where individuals choose to learn for personal gain and weigh that with the possible costs of studying options (Bouchard, 2009a, 2009b). More on Bouchard's areas of learner control will be covered in Chapter 2.

This study sought to better understand whether teachers as self-directed learners are able to adequately apply the algorithmic aspect to select high quality ELL learning resources online. High quality is defined as aligned with recommended instructional practices described in the LIEP report and exhibiting characteristics of high quality video design. These will be described further in Chapters 2 and 3.

Figure 1.1 shows the relationship between the different research questions and Bouchard's algorithmic area of learner control. Question 1 revealed the content quality of the videos being analyzed, while question 2 determined the design quality. The results of question 1 and 2 examined each video's quality rating, which was compared (purple line) with each video's user rating to resolve whether or not the self-directed learners are evaluating and selecting (algorithmic area) videos of high content quality.

Figure 1.1. Conceptual Framework

Summary of Methodology

The methodology used for this study was content analysis. According to Krippendorff, "content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (2013, p. 24). The meaning of the word "text" is "not intended to restrict content analysis to written material" but also includes art, images, maps, sounds, symbols, and video; "a text means something to someone, it is produced by someone to have meanings for someone else, and these meanings therefore must not be ignored and must not violate why the text exists in the first place" (Krippendorff, 2013, p.25). The text analyzed in this study was TeacherTube and YouTube videos. Individuals who post on TeacherTube and YouTube know that they are available for the public to view, since its "goal is to provide an online community for sharing instructional videos…provid[ing] anytime, anywhere professional development with teachers teaching teachers" (TeacherTube, 2015a). These videos fit in the definition of text offered by Krippendorff because they are products made by individuals to have meaning for other individuals. Videos regarding ELL instruction for American K-12 classrooms have meaning and those meanings found therein were analyzed to determine their alignment with instructional practices outlined in the LIEP report (2012) as well as the characteristics of quality instructional video by Morain and Swarts (2012).

The unit of texts being studied were 15-second intervals of video, which were coded according to variables set in a codebook. The codebook underwent validity and reliability testing and included conceptualized and operationalized constructs from the explained instructional practices in the LIEP report and characteristics of quality instructional video. The population of videos underwent a screening protocol and was systematically retrieved by typing search phrases in the TeacherTube and YouTube search bar. The protocol items included: videos that resulted using the search phrase "ELL" and whose source or intended audience was education professionals of American K-12 classrooms. Some videos were advertisements that claimed to show instructional strategies, but rather included testimonials on a product rather than a demonstration of a teaching strategy. These were excluded. The phenomenon being studied was K-12 teachers as self-directed learners selecting sources for professional development, so choosing videos that were current and directed for K-12 classroom instruction was appropriate.

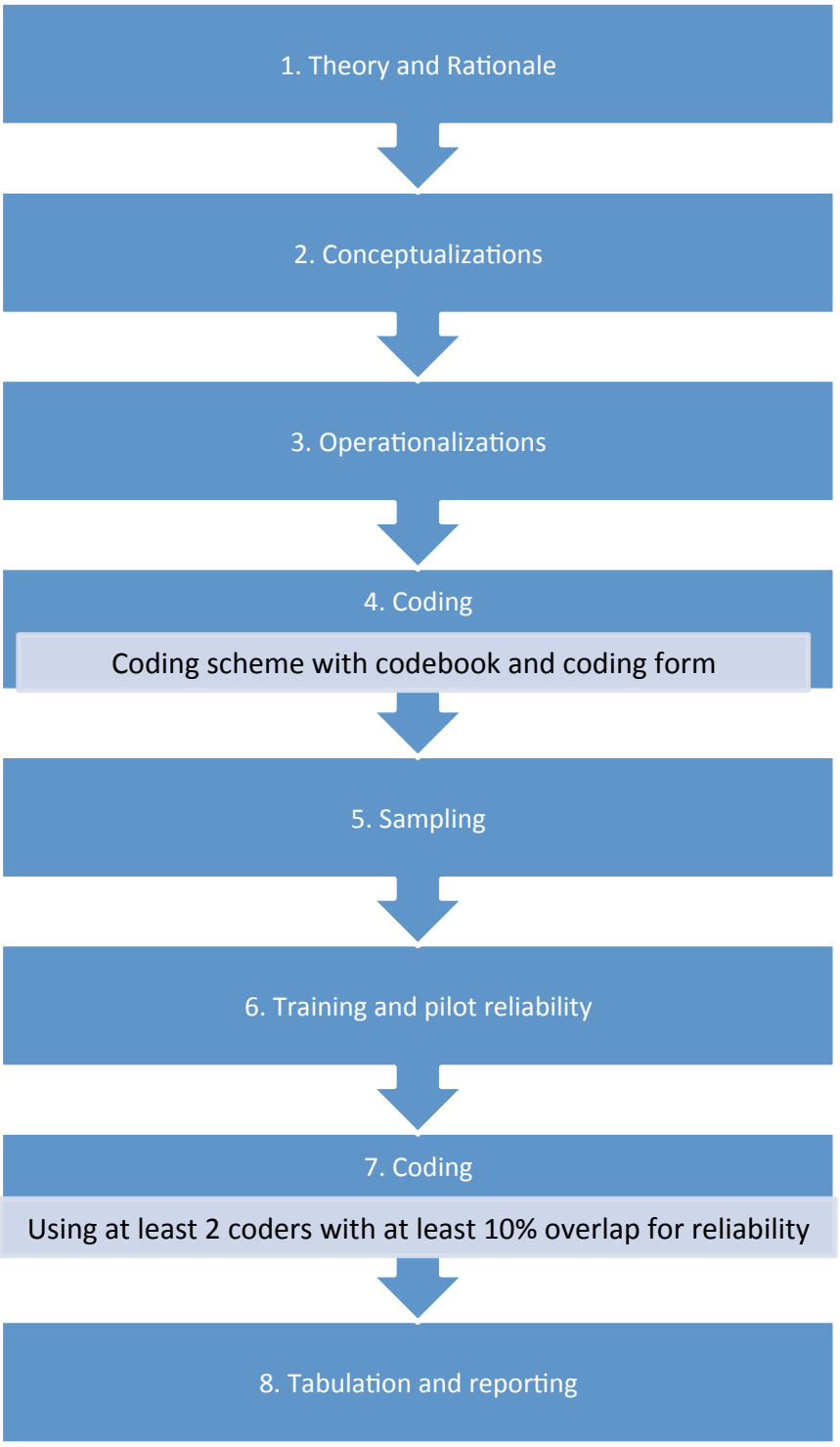

Figure 1.2. A Flowchart for the Typical Process of Content Analysis Research. In *The Content Analysis Guidebook*. By K.A. Neuendorf, 2002, p. 50-51. Copyright 2002 by Sage Publications, Inc.

The protocol yielded a sampling population of 56 videos, 28 for each video-sharing site (YouTube and TeacherTube). Two peer coders in addition to the primary researcher were trained to pilot the codebook for reliability testing. After two rounds of pilot testing, coders scored 93% agreement between a primary and peer coder. Figure 1.2 shows the typical process of content analysis research as described by Neuendorf (2002) that was used for this study.

Limitations

Limitations of this study include the use of TeacherTube and YouTube itself. The TeacherTube and YouTube search tool allows for a more systematic method of filtering videos, however, it is not a refined tool. For example, when displaying results, the number of results displayed on the search window does not match the actual number of videos. This glitch suggests that the search tool is not a completely reliable tool and videos that result may not reflect a true census of the total videos that could potentially match the search phrase. If so, there could be more videos that would be worth analyzing that would not be included.

Second, this study does not collect data to know the nature of the TeacherTube and YouTube user and if that user is representative of teachers in general. It is also recognized that not all users evaluate a learning resource in the same way. Consequently, for example, a rating of four stars from one user may not have the same meaning as a rating of four stars from another user. In addition, number of views may not be an accurate reflection of user perceptions of the quality of the videos. This is further substantiated by the correlation found between the moderate to weak correlation between video views and its upload date. Of course, the longer time a video is published, the more likely it is to accumulate views. Search engine optimization (SEO) also determines which videos populate when a user searches for information. Expert Brian Dean explains that content uploaded to YouTube should consider data on the view duration a video receives (data gathered by YouTube), subscribes a channel receives after watching a video, shares, and more to aid in whether a video populates when searching for information (2016). Negative correlations between views and quality ratings indicate that these and perhaps other limitations intervene in discovering possible relationships between YouTube and TeacherTube video user and quality ratings.

Third, this study does not include other sources of online video aside from TeacherTube and YouTube. There may be other videos on other sites that offer quality instruction on providing tips for teaching ELLs. This report does not reflect such a population of videos.

Fourth, as indicated by the LIEP report itself, there is a lack of sufficient evidence to support all strategies in the report as effective practices (U.S. Department of Education, 2012). This is also true for the characteristics of quality instructional video. The LIEP report is being used because of its depth of analysis and breadth of studies included. However thorough the report is, it still may not include every single strategy that can effectively be used in ELL teaching. Lastly, the framework for assessing instructional online video developed by Morain and Swarts (2012) is not all-inclusive. Other theories exist and may differ in identification of aspects of high quality instructional design.

Definition of Key Terms

Key terms for this study come from the instructional practices explained in the LIEP report, Bouchard's theory of self-directed learning, and literature on instructional design quality.

Algorithmic aspect. How individuals find and evaluate learning resources to enable their learning process and accomplish their educational goals (Bouchard, 2009a, 2009b).

Content based instruction. Any practice in which students learn subject related content and may learn language as part of the process (U.S. Department of Education, 2012).

Cultivating student relationships. Any practice in which teachers make efforts to understand students challenges, build trust, and cater lessons to students' unique learning goals.

English Language development instruction. Any practice that "[teaches] specific aspects of [English] as a second language" (Saunders and Goldberg, 2010, p.29).

Feedback. Any practice that provides students with "direct and explicit feedback" as students complete learning tasks (U.S. Department of Education, 2012, p.75).

Grouping or providing ELLs with oral interactions. Any practice that allows ELLs to be a part of groups or engage in oral interactions with other ELLs, English speaking peers, and instructors that are structured well for equal and appropriate participation and allow for ELLs to join new groups that continually challenge fluency without destroying student confidence (U.S. Department of Education, 2012).

Instructional video. Video that explains a procedure used to learn new skills (Kay, 2012a).

Metacognitive strategies. Any practice that "directly [teaches] learning strategies to help students attack language or content tasks" (U.S. Department of Education, 2012, p.75).

Native language instructional practices. Any practice that "[utilizes] students' L1 [first language] in conjunction with English" (U.S. Department of Education, 2012, p.76).

Response to Intervention (RTI). Any practice that uses "individualized intervention [featuring] increased responsiveness to student needs [where] decision making is based on student assessment results, and motivation is considered in text selection, instructional materials and curricula specification" (U.S. Department of Education, 2012, p.76).

Scaffolding. Any practice "in which teachers guide student learning by providing structures or frameworks that are gradually removed," including but not limited to visual scaffolds, writing scaffolds, vocabulary scaffolds, oral scaffolds, and content related scaffolds through modeling, bridging, contextualizing, building schema, representing text and developing metacognition (U.S. Department of Education, 2012, p.75).

Self-directed learner. "Individuals [who] take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p.18).

Specialized instruction. Any practice of using instruction "that is modified or that accommodates the special needs of [individual ELLs]" (U.S. Department of Education, 2012, p.73).

Vocabulary instruction/word recognition. Any practice that encourages student input and retention of new English vocabulary, including but not limited to the use of L1 [first language], knowing meaning of basic vocabulary words, review and reinforce vocabulary, providing definition and context information of vocabulary word meaning, using multiple exposures to vocabulary word and its meaning, word analysis, balancing lower and higher level vocabulary, incorporation of vocabulary instruction throughout the day and across subjects, and phonemic word learning (U.S. Department of Education, 2012).

Video design quality. Characteristics associated with good instructional design as identified in the framework for assessing instructional online video by Morain and Swarts (2012).

Summary

Overall, schools and teachers in America need to help ELLs attain language proficiency given Title I mandates in ESSA. Efforts to address this need are being made by the American government. In 2012, the United States Department of Education produced a literature review as part of a larger study investigating ways to improve language instruction education programs across the country. The review details instructional practices teachers can implement to improve their academic support for ELLs. In addition, individuals use technological tools to learn and find new ways of accomplishing tasks. TeacherTube and YouTube are sources where teachers post videos to share with others, videos that in some cases, share ideas that could help ELL students.

The purpose of this content analysis was to determine content and design quality of TeacherTube and YouTube videos for ELL instruction and identify possible relationships between quality ratings and views of each video. This information can help pre-service programs, teachers, schools, and districts to understand the alignment of such videos with high quality content and video design features as they consider using such resources for providing professional development or ideas that can improve teacher knowledge and practice in helping ELLs. A screening protocol helped narrow down the population of analyzed with a codebook based on variables that represented described instructional practices in the LIEP report and video design recommendations from the literature.

Chapter 2 is a literature review, explaining in more detail the problem, reasons, and solutions that guide the overall purpose of this study. Chapter 3 describes in more detail the processes and rationale of the study's methodology. Chapter 4 will reveal the results of the study with Chapter 5 discussing their implications.

CHAPTER 2. REVIEW OF LITERATURE

Reform is perpetual, particularly within the United States public education system. Initiatives to increase proficiency in academic standards are constantly scrutinized and evolving, influenced by changing global demands and student demographics. Within the past two decades, a particular demographic change has dynamically influenced teaching. Between the 1970s to the 1990s the numbers of immigrants rose from about 10 million to about 14 to 16 million and continued growing from 1990 to 2010 to 40 million (US Census, 2010). The percent of the foreign born to native born population more than doubled from 5.4% to 12.9% (US Census, 2010). According to the American Community Survey (US Census, 2011), 20.8% of the population speaks a language other than English at home. Of those people, 22.4% either do not speak English well or at all (US Census, 2011). Aside from teaching and meeting various content standards, United States public educators must reform their practices to meet the demands of students who are English Language Learners (ELLs). Technology may be a useful tool in enhancing teachers' knowledge and skills in instructing ELLs. With the rapidly changing needs of teachers and the limited resources available to provide professional development, many teachers are turning to available resources to learn what they need to meet their needs. They are self-directed learners. But what confidence can they have that the varied resources they turn to are of high quality? How well are they able to self-evaluate their quality?

Changing Demographics

In a ten-year period from the 2002-03 to 2011-12 school year, the percent of ELLs in public schools rose from 8.7% to 9.1% (Kena et al., 2014). From fall 2001 through fall 2011, the number of White students enrolled in prekindergarten through 12th grade in U.S. public schools decreased from 28.7 million to 25.6 million, and their share of public school enrollment decreased from 60 to 52 percent (Kena et al., 2014). Between fall 2012 and fall 2023, the number of White students enrolled in U.S. public schools is projected to continue decreasing from 25.3 million to 23.5 million, while the enrollments of Hispanics and Asians/Pacific Islanders are expected to increase (Kena et al., 2014). Needless to say, US schools are becoming

increasingly culturally and linguistically diverse (National Clearinghouse for English Language Acquisition, 2011). To ensure all students succeed, additional efforts must be made to support those who may not have had access to the early experiences that optimally prepare children for learning in English speaking schools.

Federal laws such as the Individuals with Disabilities Education Improvement Act (IDEA), reauthorized in 2004, and the Every Student Succeeds Act (ESSA) of 2015, require that students with increasingly diverse learning characteristics have access to and achieve high academic performance in the general education curriculum. Title I of the ESSA, a revision of the Elementary and Secondary Education Act (ESEA), mandates language instruction for limited English proficient (LEP) and immigrant students. Title I's first purpose is to "provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps" (ESSA, 2015). Furthermore, Title III authorizes funding "to help ensure that English learners, including immigrant children and youth, attain English proficiency and develop high levels of academic achievement in English" (ESSA, 2015). The U.S. Department of Education's Office of English Language Acquisition (OELA) and others promote the view that all teachers of ELLs are teachers of language, even if the teachers' primary mission is teaching history, mathematics, science, or another content area (Kenny, 2011).

The achievement gap between non-ELLs and ELLs in math has been reported as 25 points at the 4th grade level and 41 points at the 8th grade level on a 500-point assessment (Kena et al., 2014). In reading, the achievement gap is 38 points at the 4th grade level and 45 points at the 8th grade level (Kena et al., 2014). These scores have not differed too much in ELL performance since 1996 (Kena et al., 2014). This suggests that a 20-year effort of improvements and supports for ELLs has not yet yielded substantial positive outcomes.

The dynamics of students becoming increasingly culturally and linguistically diverse and frequently living in low-income conditions, coupled with increased pressures to achieve academically under national mandates has created a complex set of expectations that schools and teachers must address. Finding sources of information and resources to better serve these diverse learners is crucial.

Teaching English Language Learners

The United States aims to effectively train newcomer ELLs in communicating in English and adapting socio-culturally in order to survive in their new second language (L2) culture (U.S. Department of Education, 2012). However, these goals are difficult to achieve when there are many obstacles to supporting these learners and the teachers who work with them. There are complex reasons why teachers are unprepared and much needs to be done to achieve teacher effectiveness in working with ELLs. A total of 55 articles were reviewed to understand and improve how teachers prepare to enhance ELL success in their schooling.

In 2012, the United States Department of Education released a report entitled *Language Instruction Educational Programs (LIEPs): A Review of the Foundational Literature*. This meta-analysis used foundational literature on best practices for teaching ELLs and case studies of 20 school districts with well-designed LIEPs in place to provide a resource for educators in implementing, selecting, and designing LIEPs in their own local areas. According to this report, training in-service teachers on second language acquisition (SLA) theory is critical not only in equipping them with the tools they need to address ELL needs but also to increase teacher confidence and self-efficacy in doing so.

The report highlights the importance of culture and community awareness among teachers in effectively serving ELLs (U.S. Department of Education, 2012). Teachers must be able to promote a positive socio-cultural environment for ELLs in order to ensure their long-term academic success. Using examples from students' lives, embedding new concepts and skills in problem-solving activities that are relevant and meaningful to them, selecting instructional materials that tap their interests, creating communities that consider interaction patterns and approaches to learning prevalent in students' homes and communities, and using evaluation strategies in a way that is familiar to them are all products of teacher cultural awareness (U.S. Department of Education, 2012). So important is this aspect of effective diversity teaching, some academics are interested in the recruitment efforts of institutions and schools towards hiring and graduating minority teacher candidates (Ingersoll & May, 2011; Villegas, Strom, & Lucas, 2012). The argument is that ensuring minority teachers teach in diverse schools would help to create a learning environment more sensitive to ELL needs, as culturally aware classrooms can be fostered by teachers who understand and are accepting of ELLs' special needs

(Ingersoll & May, 2011; Villegas et al., 2012). Of course, there are far more teachers in schools who do not come into the profession with the level of cultural awareness recommended.

Some teachers who may not have the experience of learning a second language to draw from when seeking to support ELL student learning may still be willing to undergo a process of changing their personal dispositions. A study aimed at promoting collaboration between Teachers of English to Speakers of Other Languages (TESOL) and content area teachers (CATs) through blogs revealed that teachers' frustrations serving ELLs may stem from lack of confidence or understanding about how to help these students; as teacher competence increases, attitudes may change (Baecher, Schieble, Rosalia, & Rorimer, 2013).

Factors Underlying Success in Language Instruction Educational Programs

The *Language Instruction Educational Programs (LIEPs): A Review of the Foundational Literature* (U.S. Department of Education) report, hereafter referred to as the LIEP report, reviewed a total of 173 literature reviews, expert opinions, studies, and reports from well-known research centers published in the last 15-20 years. The report looks at ELLs from a broad perspective, detailing different approaches and models that can be used to support ELLs based on SLA theory (U.S. Department of Education, 2012). The documents reviewed were carefully chosen by a panel of experts and included articles and studies critically important to the ELL field (U.S. Department of Education, 2012). The fourth section of the report considers how teachers can improve their instruction and how districts, schools, and communities can best support such efforts by reviewing (1) specific practices and protocols teachers can adopt during class instruction to support ELs' acquisition of English or mastery of academic content, (2) the content and components of promising professional development (PD) for teachers, and (3) how PD should be implemented and evaluated (U.S. Department of Education, 2012).

The report stresses its intent to "provide information about the current shape of discussion and direct readers to resources" that can assist in implementing programs to ensure ELL success (U.S. Department of Education, 2012, p.viii). Therefore, taking a more focused look at this section of the report may prove helpful, particularly in guiding teachers to better understand SLA and strategies to ensure ELL success.

Figure 1.3 shows four categories of instructional practices for teaching ELLs. The first category is focused on language development, including instruction of vocabulary, getting fluent in English by using the student's first language to support learning, teaching phonology, grouping students to provide oral interaction, allowing such interaction to provide student feedback, teaching students explicit learning strategies, and varying these techniques so students can advance once they show mastery. The second category is about giving students quick, direct, and explicit feedback so they can correct themselves or continue their good language habits immediately. Third, scaffolding instruction according to learner needs is another important aspect of effective ELL instruction. Lastly, providing ELL instruction in content area courses, not only in a specific ELL class, is very important and effective.

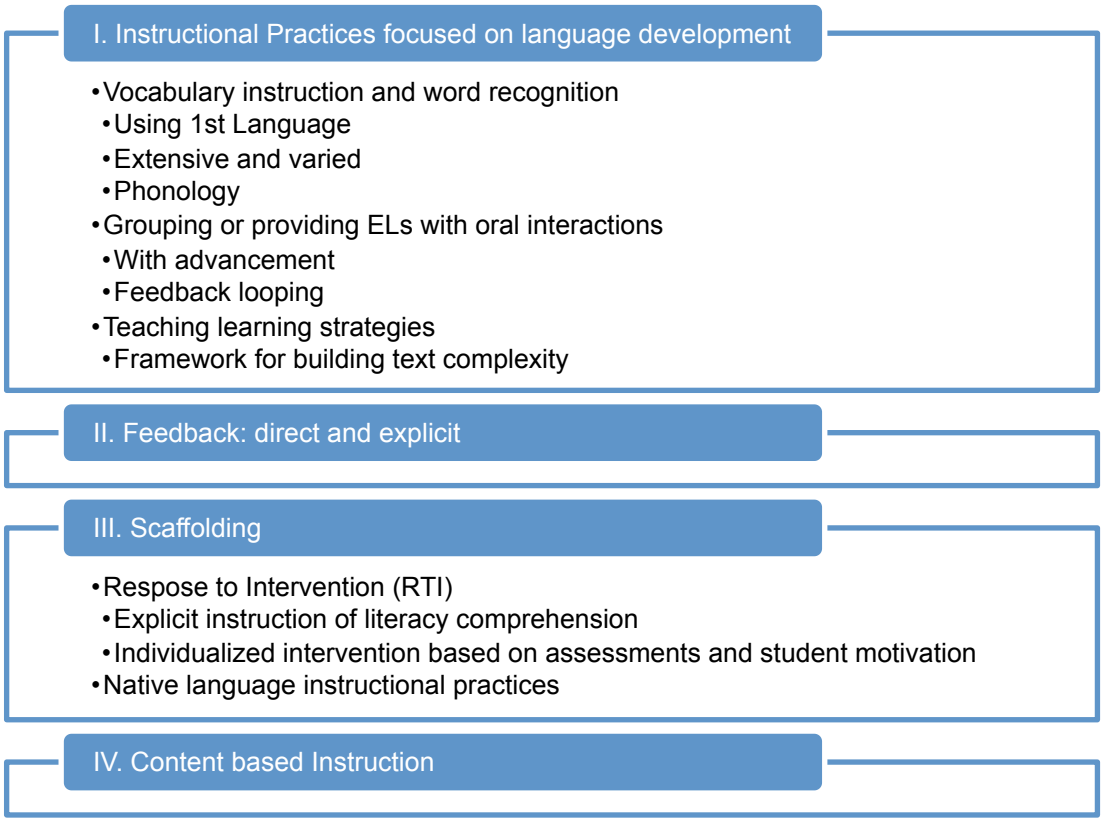

Figure 1.3. Instructional Practices. Adapted from *Language instruction educational programs (LIEPs): A review of the foundational literature*. By U.S. Department of Education; Office of Planning, Evaluation and Policy Development; Policy and Program Studies Service; Washington, DC.

Instructional Practices

Section 4 of the LIEP report focuses on instructional practices cited frequently in the literature for supporting English language learning. This section is divided further into four main areas of instructional practice that have the potential to increase ELL success (U.S. Department of Education, 2012). Most of the information contained in this section is expert opinion based on theory (U.S. Department of Education, 2012).

There are two points explained in the LIEP report about ELL instruction in general. First, dedicated instruction on English language development (ELD) in addition to content-based instruction showed significant gains in English language learning (U.S. Department of Education, 2012). Second, specialized instructional practices tailored to the needs of individual ELLs have shown more progress in learning than those that are not (U.S. Department of Education, 2012). Instructional practices that include both of these aspects aligned with studies that found progress in supporting ELLs (U.S. Department of Education, 2012).

Instructional practices for language and literacy. According to the LIEP report, much of the literature on instructional practices for ELLs focuses on language development (U.S. Department of Education, 2012). Furthermore, the literature focuses on literacy when it comes to instruction for ELLs, which suggests that researchers view it as a critical component of language proficiency (U.S. Department of Education, 2012). Oral language proficiency is the second most recurring component of language proficiency in the literature, usually seen as a tool that facilitates literacy development (U.S. Department of Education, 2012). Regarding these areas of language proficiency, studies seem to reflect that strategies for teaching native speakers of a language are as effective in supporting ELLs with special attention to vocabulary, a variety of modalities, and extra practice (U.S. Department of Education, 2012). There are three main areas in the LIEP report for teachers to focus their instructional practices for language and literacy: 1) vocabulary instruction and word recognition; 2) grouping students and providing ELLs with opportunities for oral interaction; and 3) teaching ELLs learning strategies to help them attack language and content tasks (U.S. Department of Education, 2012).

Vocabulary instruction and word recognition. There are many ways teachers can teach vocabulary and word recognition especially given different school and student contexts (U.S. Department of Education, 2012). The LIEP report describes a number of studies that reflect instructional practices for vocabulary instruction and word recognition found in the literature such as reviewing and reinforcing vocabulary to increase fluency, doing class read-alouds, directly teaching phonics, using discussion to draw out the different contexts and meanings a particular word can have, doing word analysis, using multimedia and multiple modes in teaching vocabulary, and more (U.S. Department of Education, 2012). No matter the method, getting students to increase and recognize English vocabulary is an important part of English language development (U.S. Department of Education, 2012).

Grouping and oral interaction. When it comes to grouping students and providing ELLs with opportunities for oral interaction, there are a few important factors to consider. Grouping does not always work for ELLs because not all ELLs participate equally (U.S. Department of Education, 2012). Also, native speakers may not necessarily know how to include ELLs appropriately based on their language needs (U.S. Department of Education, 2012). Therefore, grouping and oral interaction activities need to be carefully structured to ensure productive interaction for English language development (U.S. Department of Education, 2012).

Furthermore, groupings should change and students should work with other students who will continually build their language proficiency (U.S. Department of Education, 2012). For example, an ELL might start out in a group with other ELLs who might know a few English words and can practice those together. However, students who develop more fluency than their group mates should join a new group that can appropriately challenge and teach him or her more skills.

Lastly, groupings should be sensitive to the confidence level of the individual English language learner and the skills needed to interact with more fluent peers (U.S. Department of Education, 2012). Being sensitive to this will allow ELLs to better increase their knowledge and confidence through what is called a "Feedback Loop" (U.S. Department of Education, 2012). For example, ELLs who increase in their language skills will naturally increase their confidence and level of English use, which will in turn further increase their language skills (U.S. Department of Education, 2012).

Learning strategies. Learning strategies include teaching an English language learner how to tackle a language or content task that directly will help them succeed academically (U.S. Department of Education, 2012). Many of these strategies are process based and focused on reading comprehension (U.S. Department of Education, 2012). Strategies are cognitive and metacognitive in getting students to monitor their own comprehension and think of their reading in multiple ways including: summarizing, predicting, clarifying, and questioning (U.S. Department of Education, 2012).

Feedback. Providing ELLs with explicit, direct feedback is another helpful instructional practice (U.S. Department of Education, 2012). There are multiple models within English language instruction where quality feedback plays an important role. In the Sheltered Instruction Observation Protocol (SIOP), giving quality feedback falls under the "review and assess" step, a key part of effectively supporting the English language learner (U.S. Department of Education, 2012). In Systemic-functional linguistic (SFL) writing intervention, instructors must respond and analyze student writing using three primary concepts: field, tenor, and mode when providing specific, constructive, and language oriented feedback (U.S. Department of Education, 2012). Lastly, studies show improvement in student performance when teachers gave form-focused instruction, drawing student attention to linguistic forms in spoken communicative context, paired with prompts for correction when students misspoke (U.S. Department of Education, 2012).

Scaffolding instruction. Scaffolding is an instructional practice where instructors provide structure and frameworks for students to complete tasks, which are gradually removed as student shows more independent competence (U.S. Department of Education, 2012). There are various scaffolds that can occur in English language instruction: visual, writing, vocabulary, oral, and content-based scaffolds (U.S. Department of Education, 2012). Furthermore, a Walqui's scaffolding model emphasizes that instructional scaffolding should focus on the structure and process of learning and that there are six main types: modeling, bridging, contextualizing, building schema, representative text, and developing metacognition (U.S. Department of Education, 2012). Using the writing modality to promote literacy and have students reflect, express, and discuss story lines through literacy logs and regular writing assignments have also proven to be effective scaffolding strategies (U.S. Department of Education, 2012).

Response to intervention (RTI*).* There is strong evidence that response to intervention (RTI) is an effective form of scaffolding that teachers can provide for their students (U.S. Department of Education, 2012). There are vast ways in which teachers can administer RTI to their students, including giving explicit instruction of literacy components, such as fluent reading, phonological awareness, instructional-level reading, and word study and writing (U.S. Department of Education, 2012). Individualized intervention is at the heart of many RTI programs, where instructional decisions are based on student test performance and student motivation to respond adequately to student needs (U.S. Department of Education, 2012).

Native-language instructional practices. Student progress in reading comprehension was reported in studies that included the ELL's native language during instruction (U.S. Department of Education, 2012). In these studies, students were allowed to think aloud in their native language while reading an English text, participate in digital reading programs that incorporate the students' first language, and build skills in phonemic awareness, phonemic decoding, word recognition and text processing, construction of meaning, vocabulary, spelling and writing all the while using the students' first language (U.S. Department of Education, 2012).

Universal design is another means where a students' first language is used in learning. A digital reading program uses universal design as a means for representing text and expressing student learning through images, audio recordings, and written language that are both English and Spanish (U.S. Department of Education, 2012). Overall, using native language instructional practices is a viable avenue for English language learning. Instructional models that incorporate bilingual instruction, such as transitional bilingual education (TBE), developmental bilingual education (DBE), and two way immersion (TWI) suggest that promising instructional practices for native language instruction are similar if not identical to those for second language instructional practices (U.S. Department of Education, 2012).

Content instruction for English learners. Most English learners receive instruction on content in English, which provides unique opportunities as well as challenges (U.S. Department of Education, 2012). In general, all of the strategies, approaches, and models are the same as those previously mentioned (U.S. Department of Education, 2012). At the same time, this area of English language learning is a new area of research, yielding studies and experts with various strategies, models, and approaches to incorporating content with English language instruction (U.S. Department of Education, 2012). Such include the Quality English and Science Teaching (QUEST) intervention focusing on inquiry based science learning where content is taught through visuals, modeling, and ongoing discussion; the science learning cycle, where teachers use the language of science as a part of their instruction, then scaffold the intersections between language and content, and then assess students with multiple measures; and a framework for language and content instruction in history, where the instruction focuses on grammar and coaching students in identifying various important concepts in history through writing and higher order thinking (U.S. Department of Education, 2012). Overall, most of the detailed strategies used in such approaches and frameworks use those explained above: vocabulary instruction and word recognition, group and oral interaction, teaching metacognitive learning strategies, giving good feedback, and scaffolding (U.S. Department of Education, 2012).

Getting an idea of what these strategies are and how they are used in their various purposes is a good first step in understanding how teachers can improve their own practices for instructing ELLs. Knowing what resources there are that expose teachers to these ideas and increases their awareness of these strategies is another important aspect.

Teacher Development

Not all teachers have knowledge of theories and instructional strategies for second language acquisition and not all are culturally aware (Good et al., 2010; Leung, Davison, & Mohan, 2013; Webster & Valeo, 2011). So what can be done to increase their effectiveness in teaching ELL students? The literature points to teacher preparation programs, professional development, and professional community collaboration as mechanisms for addressing the challenges of preparing teachers to teach ELL students.

Teacher Education Programs (TEP)

One way efforts are being made to increase teacher effectiveness in learning strategies for ELLs and building cultural empathy is by improving teacher education programs for pre-service teachers (Bunch, 2013; Calderon, Slavin, & Sanchez, 2011; Good et al., 2010; Kanno & Stuart, 2011). In 2011, a qualitative study was conducted in Canada interviewing and surveying six teachers on their feelings of preparedness to work with ELLs after just graduating from a teacher education program for elementary aged students (Webster & Valeo). The qualitative study revealed that these teachers felt there was a need for mandatory classes focused on teaching the English language alone (Webster & Valeo, 2011). These participants received a few seminars where guest speakers would come and give them resources on strategies for ELLs, but no direct instruction on how to approach these types of students. The participants felt that they received generalized strategies focused on relationship-building and cultural awareness with their ELL students. Although these are important factors in supporting ELLs, these participants did not feel confident or prepared to directly help their ELL students succeed academically.

Adding to the lack of cohesive teacher preparation for ELLs is the often-disconnected nature of clinical (supervised field) experiences. Few clinical experiences target ELL populations (Webster & Valeo, 2011). Hutchinson (2013) found strong positive outcomes in teacher attitudes and confidence following a mandatory three-credit foundations course and clinical for teaching ELLs. Other scholars reported that providing practical experiences where pre-service teachers work with ELL and other students are difficult, since it is not always easy for university faculty and school teachers to collaborate (Sakash & Rodriguez-Brown, 2011; Thompson, 2013). Nevertheless, they stress the importance of overcoming those challenges for the sake of providing quality teacher preparation for ELLs (Baecher, 2012).

While the discussion of improving teacher education programs for ELL success is important, it regards teachers not yet in the field. Supporting teachers currently educating ELLs is also important since many of them completed their training prior to the new language proficiency mandates and standards.

Professional Development

Professional development is one way in-service teachers receive training after graduating from a teacher education program. As new research-based methods and programs are adopted

for school-wide interventions, professional development becomes a critical part of changing educational practice towards supporting diverse learners (Hansen-Thomas, Casey, & Grosso, 2013; Kim, Walker, & Manarino-Leggett, 2012; Schneider, Huss-Lederman, & Sherlock, 2012; Short & Boyson, 2012; Short, Cloud, Morris, & Motta, 2012; U.S. Department of Education, 2012; Walker & Edstam, 2013). A popular strategy for meeting the needs of ELLs is called sheltered instruction, which in itself has its own protocol of conditions wherewith teachers and students are to interact (Short et al., 2012). Professional development is a vital component of effectively familiarizing teachers with sheltered instruction protocol. A branch of sheltered instruction is called the Newcomer's program, a specialized academic environment that serves newly arrived immigrant ELLs (Short & Boyson, 2012). Within this program are a number of models and rules on how long these newcomers are to be instructed and under what kind of conditions (Short & Boyson, 2012).

Some professional development opportunities arise out of district and university level efforts to improve in-service teacher knowledge of ELL best instructional practices. A workshop named "Team Up!" provided teachers with a reflective process that encouraged them to work with other teachers to authentically assess and improve strategies used in supporting ELL success (Walker & Edstam, 2013). Another initiative, called the Quality Education Academy (QEA) allowed teachers structured professional development opportunities with universities to get quality training on sheltered instruction for ELLs (Kim et al., 2012). The QEA required trained teachers to bring their knowledge back to their school and train other staff members (Kim et al., 2012). Professional development, therefore, is one way to get teachers to learn more strategies (Russell, 2012).

Though professional development often seems to come from the top-down, many teachers take initiative to improve their practice. They recognize the need for increased knowledge to improve their work (Webster & Valeo, 2011). A qualitative study that compared TESOL and content area teachers (CAT) perspectives on ELL students revealed that CAT felt they needed more training and support in teaching ELLs (Pawan & Craig, 2011). The CAT reported to have cultural empathy and a belief in their students' self-efficacy, but wanted training in strategies to better support their learners in the classroom (Pawan & Craig, 2011). In these cases, professional development is desired by teachers and seen as a useful tool.

Professional and Community Collaboration

Research suggests that the most effective professional development experiences encourage teacher empowerment and collaboration (Brancard & Quinnwilliams, 2012; Hansen-Thomas et al., 2013; Kabilan, Adlina, & Embi, 2011; Kim et al., 2012; Pawan & Ortloff, 2011; Russell, 2012; Schneider et al., 2012; Short & Boyson, 2012; Short et al., 2012; Verplaetse et al., 2012; Walker & Edstam, 2013). These experiences are created though Communities of Practice (COPs) or Professional Learning Communities (PLCs). In COPs and PLCs, teachers share expertise with each other and by so doing, further develop each other's knowledge and improve each other's practice in a self and co-constructive manner (Brancard & Quinnwilliams, 2012; Hansen-Thomas et al., 2013; Kabilan et al., 2011; Verplaetse et al., 2012; Walker & Edstam, 2013). Not all professional development opportunities are collaborative. Many still follow the traditional type of learning, where an administrator or leader disseminates information. Constructivist approaches to professional development (COPs and PLCs) allow teachers to feel respected in their expertise and control their learning, while at the same time showing accountability in transforming instructional practice (Brancard & Quinnwilliams, 2012; Hansen-Thomas et al., 2013; Kabilan et al., 2011; Schneider et al., 2012; Verplaetse et al., 2012; Walker & Edstam, 2013).

Collaboration is such a vital part of teacher effectiveness that schools are adopting collaborative systems of serving their ELL students. In many schools, collaboration between CATs and TESOL are the only way ELL students receive academic support in the form of co-teaching and developing school ELL programs both within the school and community (Brancard & Quinnwilliams, 2012; Bell & Baecher, 2012; Hansen-Thomas et al., 2013; Kabilan et al., 2011; Kim et al., 2012; Martin-Beltran & Peercy, 2012; Russell, 2012; Short & Boyson, 2012; Short et al., 2012; Walker, 2012; Walker & Edstam, 2013). More teachers across the country are asked to share their teacher practices and be open-minded about transforming them for the sake of ELL academic success. Some teachers find this easy to do and a part of their normal teacher practice (Verplaetse et al., 2012; Walker & Edstam, 2013). Teacher, school, and district collaborative efforts show positive outcomes that are self-sustaining (Hansen-Thomas et al., 2013). Teachers build effectiveness that contributes to ELL success as they improve their practice based on resources provided effectively by their schools and districts.

Other teachers and schools need structure and leadership support to nurture successful collaborative outcomes between all stakeholders (Brancard & Quinnwilliams, 2012; Martin-Beltran & Peercy, 2012; Pawan & Ortloff, 2011; Russell, 2012; Short & Boyson, 2012; Verplaetse et al., 2012; Walker, 2012). However, not all teachers have collaborative groups at their school, some take time to develop, and all need administrative or resource support.

Online Learning Communities

There are many other priorities and issues that schools may have, such as school crime, student poverty, lack of resources, and more that make it difficult to carry out quality professional development and training (Kena et al., 2014). In face of these other challenges, the demographics of America's public schools are continuing to diversify with increased enrollment of immigrants and ELLs (Bunch, 2013; Garcia et al., 2010; Kena et al., 2014). So what happens to these students and teachers who remain in need of support and training while schools and districts may be focusing efforts elsewhere? There are examples of teachers who chose to train themselves and find resources outside of their schools and districts (Avalos, 2011; Duncan-Howell, 2010). These teachers choose to be self-directed learners in supporting their ELLs by gaining knowledge and increasing skills independently, finding their support and training online.

For those seeking and developing knowledge independently, distance education and online learning is a viable avenue. By definition, distance education is "education that uses one or more technologies to deliver instruction to students who are separated from the instructor as well as to support regular and substantive interaction between the students and the instructor synchronously or asynchronously" (Kena et al., 2014). While some online courses are conducted through learning management systems, other courses make use of web 2.0 tools to support learning. Distance education enrollment has rapidly increased in the past few years and online courses are being increasingly adopted by universities (Allen & Seaman, 2013; NCES, 2014; Roy, 2013).

Furthermore, online learning can help to create collaborative and enriching learning experiences similar to a face-to-face professional learning community. In a study by Baecher et al. (2013) a successful collaborative and clinical experience occurred between pre-service TESOL and CATs through weekly blogging with each other and ELL students. Student teachers reported in this study that the collaborative experiences were helpful in allowing them to learn

from each other and get first-hand experience with ELL students that built cultural empathy for them (Baecher et al., 2013).

A series of other studies were conducted to show how useful such online learning communities are after establishing a *Knowledge Building Environment* (KB). Ultimately, these studies showed that online learning communities lead to a high possibility of achieving knowledge advancement (Hong, Chang, & Chai, 2014; Hsieh, 2012).

Hong et al. (2014) conducted a study of 30 students who participated in a teacher education course in Taiwan using the Knowledge Forum. Over a course of 18 weeks, the students engaged online to complete a set of four tasks, where the quality and quantity of ideas exchanged were recorded along with a course evaluation survey completed at the end (Hong et al., 2014). Results of the study show overall a positive experience for participants evidenced by increased participation and generating of ideas in completing the course tasks and the survey responses indicating students enjoyed the KB course more than any other course taken from the university (Hong et al., 2014). Having a place to share ideas and save information online can an effective alternative to face-to-face collaborative professional development.

The greatest challenge to online learning, however, is finding students who are self-directed enough to follow through and continually use such resources (Allen & Seaman, 2013; Chen, 2013). There are many aspects over which self-directed learners control their learning experience, and therefore the skills required for effectively guiding one's own learning requires strong cognitive abilities (Hsieh and Tsai, 2014; Tsai, Hsu, & Tsai, 2012; Tseng, Liang, & Tsai, 2014). Highly motivated teachers familiar with the pedagogical process are capable of this type of self-directed learning (Albers & Frederick, 2013; Verplaetse et al., 2012). Self-directed learning may be another way for teachers to learn more about serving their ELL learners.

Self-directed Learning

According to Malcom Knowles (1975), self-directed learning "is a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p.18). Teachers commonly act as self-directed learners when they research ways to improve their

practice, including more effectively instructing ELLs (Albers & Frederick, 2013; Verplaetse et al., 2012).

Knowles and other academics explained how self-directed learning is a series of stages an individual undergoes to gain the knowledge and skills they desire, ultimately expressing their "human personal agency" (Grow, 1991; Tough, 1979, p.45). Tough in particular outlined these stages of "being":

1. Decide on a learning goal
2. Determine a learning sequence and a learning schedule
3. Secure the physical and financial resources to pursue the learning project
4. Select a suitable place to learn
5. Select resources and materials
6. Find appropriate resource persons
7. Resolve motivation issues
8. Overcome learning difficulties
9. Minimize self-doubt
10. Set subsequent learning goals at the end of a learning sequence (1979).

However, theorists such as George Spear and Donald Mocker (1984) argue that self-directed learning is more of an environment based experience rather than a pre-planned series of steps. According to them, "self-directed learners, rather than pre-planning their learning projects, tend to select a course from limited alternatives which occur fortuitously in their environment" (p.4).

Four Areas of Learner Autonomy

Paul Bouchard (2009a, 2009b) elaborated further on self-directed learning to show that there are multiple dimensions of learner autonomy; that individuals have both formal processes and environmental factors making up their overall experience. His theory recognizes four areas (Bouchard, 2009a, 2009b) as depicted in Figure 2.1. The first area is conative, or psychological, where individuals control their drive, motivation, initiative, and confidence. This is affected by the individual's urge to learn, their social networks, which determines their support and resources, and past learning experiences, which may or may not have allowed them to gain autonomous learning strategies (Bouchard, 2009a, 2009b).

The second area, algorithmic, has to do with the pedagogical aspects over which an individual has control over their learning, such as sequencing, pacing, goal setting, evaluation and selection of resources, and final evaluation and preparation for validation. Third, is semantic, or how learners navigate information landscapes that are available to them. Lastly, the fourth area of learner control is economy, the perceived or actual value of learning, where individuals chose to learn for personal gain and weigh that with the possible costs of studying options (Bouchard, 2009a, 2009b).

The first two areas of learner control are completely based on the individual, whereas the last two areas are based on the individual's environment (Bouchard, 2009a, 2009b). This model is useful to understand self-directed learner teachers, who seek resources outside of their classrooms to improve their skills working with ELLs. Understanding these types of teachers is the first step towards adequately finding solutions that can assist them and ELLs in achieving academic success.

There are examples of individuals who have motivation, initiative, and confidence to learn skills that could improve instructing ELLs. Some teachers have personal experiences that establish their cultural empathy because they too are minorities (Ingersoll & May, 2011; Villegas et al., 2012). The conative area of learner control definitely exists with teachers who take self-directed initiative to improve their teaching for ELLs.

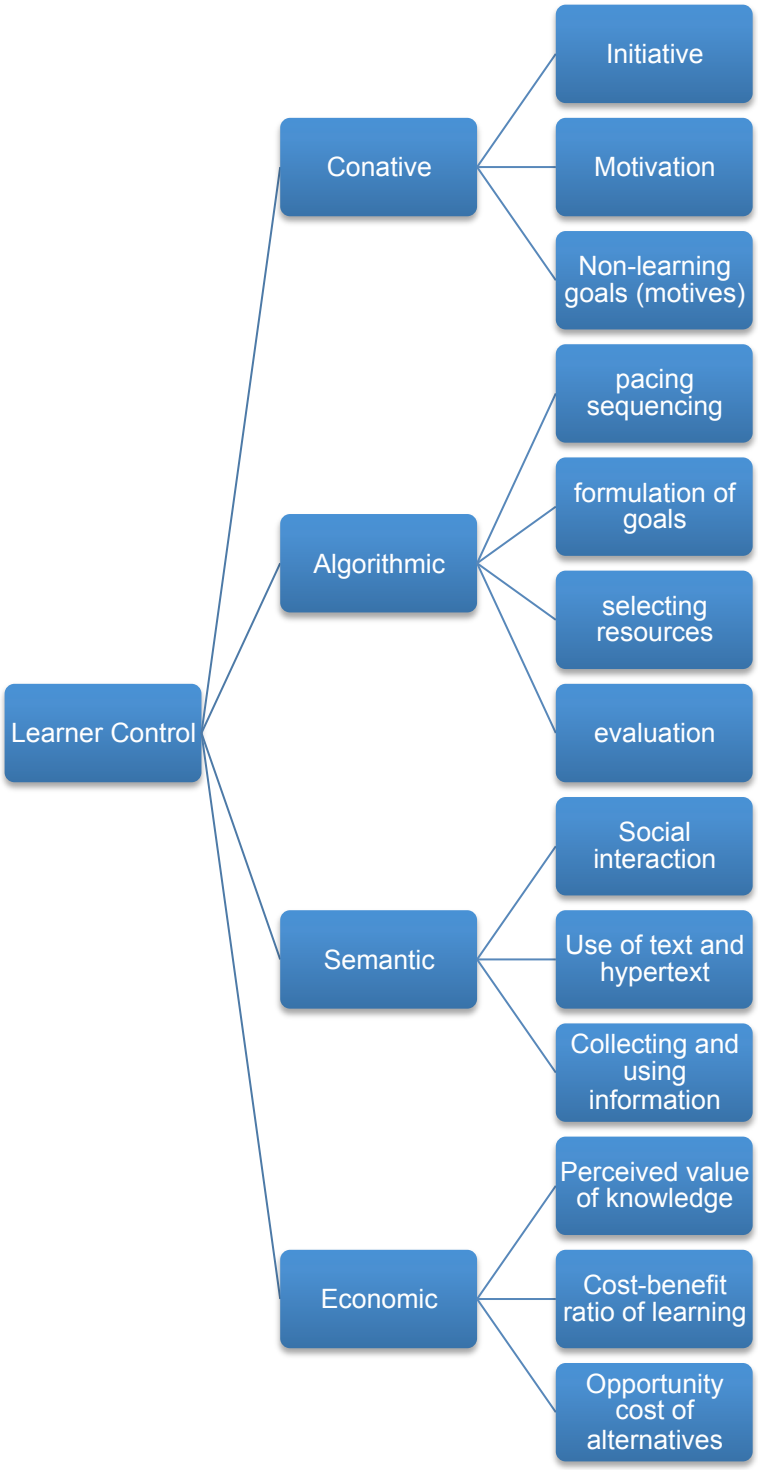

Figure 2.1. Areas of Learner Autonomy. In "Some Factors to Consider When Designing Semi-Autonomous Learning Environments," by P. Bouchard (2009a), *Electronic Journal of e-Learning, 7(2)*.

Also demonstrated, many teachers are effectively controlling their learning pedagogically by joining professional development trainings or tightly designing their own learning (Albers & Frederick, 2013; Verplaetse et al., 2012). One case study highlights Nancy, a CAT who felt unprepared to work with her ELLs and joined a PLC without school or district mandates to improve her knowledge (Walker & Edstam, 2013). Teachers can learn new skills to improve language development by choosing to go back to school or becoming dual-certified to teach ESOL. They can also seek out professional development opportunities or reach out and collaborate with ESOL experts.

When it comes to online information searching strategies, scholars say that those individuals who are able to monitor different sources and integrate information found therein display advanced and more sophisticated standards of online resource selection (Hsieh & Tsai, 2014; Tsai et al., 2012; Tseng et al., 2014). These are the types of learners able to choose information most accurate to the knowledge they are hoping to gain (Hsieh & Tsai, 2014; Mason, Boldrin, & Ariasi, 2010; Tsai et al., 2012; Tseng et al., 2014).

When it comes to the semantic and economic areas of learner control, teachers can seek out TEPs, professional development, and collaborative experiences on their own. While some choose to learn from books, others prefer learning through workshops (Bouchard, 2009b). Others still, prefer using the Internet and technological resources (Bouchard, 2009b; Bouchard, 2011). The semantic area of learner control suggests that whatever form of learning resource used depends on which are most accessible and comfortable for the learner to navigate (Bouchard, 2009b).

Some learners care more about economic affordance than accessibility or comfortably navigational content. According to Langel (2011), many home sewists are self-directed learners, especially since sewing is not a widely accessible or mandatory topic of study in most schools. Langel (2011) studied the online resource selection and evaluation of home sewists when navigating sewing tips and found that most of the 15 participants chose resources that had the most value for its price. This is an example of the economic area of learner control and how price affects learner choice and evaluation of resources.

However, in other studies using students in science related fields, results indicate that the algorithmic area of learner control is powerful still. They found that students display sensitivity

to accurate information when selecting online resources (Hsieh & Tsai, 2014; Tseng et al., 2014; Tsai et al., 2012). Halverson, Siegel, and Freyermuth's (2010) study participants were 129 university students in a biotechnology course who completed a research assignment through which the accuracy of information and choice of online resources were analyzed. Halverson et al. (2010) found that majority of the students looked at the credibility of the source as an indicator of online resource selection. Secondly, students selected online sources that showed comparable information to other sources (Halverson et al., 2010). These resource choices indicate that there are self-directed learners who make critical and effective choices when seeking information online. Overall, students who have higher cognitive ability and greater working memory capacity are more likely to navigate and integrate information from online resources towards more accurate knowledge building (Halverson et al., 2010; Hsieh & Tsai, 2014; Mason et al., 2010; Tsai et al., 2012; Tseng et al., 2014).

There are few studies that describe teacher selection of online resources and information to construct their own knowledge as self-directed learners. Several scholars have attempted to evaluate how metadata such as ratings and comments about online resources affect teacher selection of those resources (Abramovich & Schunn, 2012; Abramovich, Schunn, & Correnti, 2013). Clements and Pawlowski (2012) administered two surveys to about 60-80 teachers and found that 89% of teachers select online resources through browsing, 82% select them because they were recommended by peers, 71% because they were recommended by personal friends, 56% because they were well ranked, and 58% because they came from a reputable organization. None of these studies indicate the cognitive complexity teachers utilize when building knowledge from these online sources. It is hoped that as teachers use online resources, they too, are being careful and actively using their cognitive abilities to effectively integrate information that surfaces when navigating through online repositories and networks.

Technology as a Resource

The increased use of technology, particularly online learning communities for self-directed learning, comes because of its ease of accessibility—a semantic aspect of learner control (Allen & Seaman, 2013; El-Hani & Greca, 2013; Kena et al., 2014). Many teachers use web 2.0 tools to get lesson plan ideas (Jones & Cuthrell, 2011). Some prefer these online sources to

printed text or manuals, because of their ease of use in accessing multimedia material (Lee & Lehto, 2013). Technology provides teachers with different resources and learning opportunities, allowing them to take ownership of their own learning by asking them to participate in creating information being shared (Lin & Michko, 2010). In Brazil, a virtual community of practice was created to provide teachers an online network to drive pedagogical innovation in schools since it is often difficult to gather teachers together with the many responsibilities and diverse work schedules they have (El-Hani & Greca, 2013). The community of practice was named ComPractica and provided asynchronous communication through forums, synchronous communication through chats, a system for storing files, and an environment for collaborative authorship through blogs and wikis (El-Hani & Greca, 2013). Although it was difficult to clearly measure participation in ComPractica, simply because of the varied levels of participation that occurred in the one and a half year analysis time, one thing was for sure, teachers were able to share ideas, ask for help, express feelings, reflect on their practice, and more (El-Hani & Greca, 2013). Finding ways to keep teachers from being isolated from others, this virtual community of practice offered a venue for teachers to increase the knowledge and opportunity for self-learning.

Online video is growing in popularity as a resource for learning. According to two survey studies conducted by the Pew Research Center, the percentage of adults who watch online videos increased dramatically from 2007 to 2010. The percentage of adult internet-users who watched video nearly doubled from 33% as reported in 2006 to 62% as reported in 2009 (Purcell, 2010). Most of these viewers watched comedic (50%) and news videos (43%), while 38% watched educational videos (Purcell, 2010). Most online video viewers watched with other people and half shared links to videos they found with others (Madden, 2007). Furthermore, three in four viewers received links to videos they watched from others and one in five users took the time to rate or comment after watching (Madden, 2007). While most of the users uploaded video to social networking sites (52%), a slightly lower percentage of users uploaded to video sharing sites such as YouTube (49%). This trend is projected to grow as more users are relying on mobile devices to watch video, increasingly connect their devices to television screens, and cut back on their cable expenses (Purcell, 2010).

YouTube

One online video-sharing site that encourages user participation and sharing of information is YouTube. Over six billion hours of YouTube are watched a month and 100 hours of video are uploaded every minute (YouTube, 2014b). Users mostly watch music videos on YouTube, but it also is a source for learning how to solve every day problems through YouTube channels, such as instructional videos on fixing household items (ExpertVillage) or creating things (VidStatsX, 2014) are shared. The trends in YouTube use are catching the attention of educators, who are noticing its value for constructing and sharing knowledge. According to Snelson (2011b), there were 188 research papers in peer-reviewed literature that included the word "YouTube" in its title from 2006 to 2009.

YouTube is a source of many historical primary sources for social studies teachers, videos that can spark discussions in any subject, step-by-step instruction for math problems, a language learning multimedia aid, and a way for teachers to get lesson plan ideas (Jones and Cuthrell, 2011). Many studies report on the value of YouTube in engaging learners and catering to different learning styles, especially audio and visual learners (Abendroth, Golzy, & O'Connor, 2012; Bauer, 2009; Chen, 2013; Clifton & Mann, 2011; Jackman & Roberts, 2014; Krauskopf, Zahn, & Hesse, 2012; Liberatore, Vestal, & Herring, 2012; Snelson, 2010a). Also, studies suggest that the tool is widely used by students reviewing for exams in medical, nursing, and other health related fields (Azer, Aleshaiwi, Algrain, & Alkhelaif, 2012; Azer, 2012; Camm, Sunderland, & Camm, 2013; Clifton & Mann, 2011; Jaffar, 2012; Knosel, Jung, & Bleckmann, 2011; Koya, Bhatia, Hsu, & Bhatia, 2012; Murugiah, Vallakati, Rajput, Sood, & Challa, 2011; Pant, Deshmukh, Murugiah, Kumar, Sachdeva, & Mehta, 2012; Raikos and Waidysekara, 2013; Rössler, Lahner, Schebesta, Chiari, & Plöchl, 2012; Tam & Eastwood, 2012; Tourinho, de Medeiros, Salvador, Castro, & Santos, 2012). Simply, YouTube is a venue for individuals to post instructional videos, including videos about such things as health related information on human anatomy and medical procedures such as heart resuscitation. Since these procedures aim to provide public audiences and practitioners in training with guidance and knowledge in medicine, academics in these fields are increasingly concerned about the quality of information found in such videos.

A few studies have used content analyses to measure the quality of YouTube videos aligned with expert standards (Murugiah et al., 2011; Raikos & Waidyasekara, 2013; Rössler et al., 2012). While they acknowledge the educational value of these videos because they can be engaging and supplement learning, a major concern is for individuals to be aware of the quality of the videos offering instruction. Studies not necessarily measuring quality of instructional videos in the medical profession explain as well that so-called instructional YouTube videos tend to exhibit excess information that is at times inaccurate, stressing the importance of sorting through the clutter of the sometimes irrelevant information (Fernandez, Simo, Algaba, Albareda-Sambola, Salan, Amante, Enache, Bravo, Sune, Garcia-Alminana, Rajadell, & Garriga, 2011; Marks, 2013; Stohlmann, 2012). One study reported that the quality of on anatomy education video presented on an exclusive Human Anatomy Education Channel on YouTube was useful, but still suggested that YouTube videos needed to be carefully scrutinized, diversified, and modeled after educational objectives at accredited educational institutions (Jaffar, 2012). Snelson (2011a) and Gilroy (2010) encouraged individuals who seek quality knowledge on YouTube to watch YouTube for Education (YouTubeEDU), a combination of videos that are scrutinized and modeled after educational objectives from credible educators and institutions. One would simply type as the URL: youtube.com/education and receive information posted by qualified teachers, featuring lectures by professors at top universities (Gilroy, 2010). This is one solution to the quality control question of videos on YouTube.

Another solution to controlling the quality of YouTube videos for learning and instructing is to highly structure the learning environment while using YouTube. For example, YouTube videos made by professors themselves are used in online courses and have been found meaningful for e-learners because they are able to learn more about their online professors and get audio and visual instruction, a feature not always present in distance education (Bauer, 2010; Jackman & Roberts, 2014; Liberatore et al., 2012). A particular study by Chen (2013) structured YouTube watching in a university course to strengthen language learning. For one semester, 34 students learning English at a Taiwan university were required to watch a video using English 30 minutes a day for a few weeks, then watch English lessons 15 minutes a day and a favorite show using English 15 minutes a day for another few weeks. Students then were asked to watch one hour of their favorite show using English towards the end of the course. More than half of the

students improved their English language skills and found the activity engaging. YouTube has also been found to effectively enhance the constructivist and collaborative aspects of learning by encouraging students to post videos about knowledge they gain and share it with their classmates (Abendroth et al., 2012; Vogt-Schuller, 2014). In a three-year Master of Arts in teaching program, 11 participants were asked to create YouTube videos of science instruction (Abendroth et al., 2012). The study discovered that effective instructional videos should not last more than 15 minutes long, that practicing such modeling is particularly important for teaching science, and therefore a worthwhile activity for science teachers, and that teacher practice in reflectively videotaping themselves proved to be a useful tool for teacher education.

While YouTube is being increasingly used for teacher education, studies suggest that learners by and large watch videos referred by and with friends rather than searching for specific video on their own. Lin, Michko, and Bonk (2009) conducted a survey of 1,008 respondents from different countries, over half of which were from America, representing all age and education groups. The survey data reported that a high percentage of YouTube users watch and share with friends which suggests that the "number of views directly influences a video's ranking" (Lin et al., 2009). Another study by Lin and Michko (2010) reiterates that there are few tools on YouTube that allow individuals to interact and determine video ranking other than liking, disliking, and making comments. Furthermore, the study found that users want more tools that make it easier to interact with videos posted, like annotations to different parts of videos, or even a way to better filter videos that are suitable for educational use (Link & Michko, 2010). Even then, few users take the time to rank video and make comments (Lin, Michko, & Bonk, 2009). Therefore, many users of YouTube get referrals and determine credibility of videos outside of the site itself (Lin & Michko, 2010).

Overall, YouTube is being increasingly considered as a tool for online learning. Various topics and areas of expertise are being displayed on YouTube, and a main cause of concern is the quality of such video-based instruction. Used carefully, however, YouTube is proven to be a valuable asset for learning. While YouTube is not a perfect venue for learning (Lin & Michko, 2010; Wyzard, Snelson, & Rice, 2010) there is evidence of its use in constructivist and collaborative learning and indications that it can be an enjoyable experiences for users (Chau, 2010; Lee & Lehto, 2013).

TeacherTube

Similar to YouTube, one online learning solution to increase teacher and school effectiveness that incorporates professional and community collaboration is TeacherTube. Launched in 2007, the goal of TeacherTube is to "provide an online community for sharing instructional videos [and] to fill a need for a more educationally focused, safe venue for teachers, schools, and home learners" (TeacherTube, 2015a). This free resource aims to provide teachers with opportunities to collaborate and share ideas with other teachers through online video, as well as provide learning resources for students themselves (TeacherTube, 2015a). The most significant factor in the success of TeacherTube is the site's community members, who contribute videos, comment on videos, rate the quality of videos, and flag inappropriate videos (TeacherTube, 2015a). Another aspect of this site that contributes to the learning community aspect of video sharing is that videos are easily downloadable (Chmiel, 2013). User participation is much less than YouTube, and community culture is slowly building, but the site hopes that as more teachers participate, the educational value of the resource will increase (Chmiel, 2013; TeacherTube, 2015a).

There are a variety of ways teachers can collaborate on TeacherTube. Teachers can create and join content related groups, such as "Math Geeks and Proud of It" (Martinez, 2010). TeacherTube also allows teachers or school officials who feel a lack of connection within their work environment to connect online (Chmiel, 2013). For schools with few resources, videos can effectively supplement learning activities, such as a science video related to frog dissection that received over 41 million views (Chmiel, 2013). Collaborating with school staff and the larger community is also an option through TeacherTube Classrooms, where teachers can post and keep updated information about what's happening in their classrooms on the site (TeacherTube: Knowledge Base, 2015b).

Using these features makes for a viable solution in increasing teacher effectiveness. Compared to YouTube, TeacherTube has more of a commitment to provide teachers with a collaborative community of practice in sharing information. Teachers can search for information regarding teaching strategies and receive collaborative support from other teachers who post their experiences and advice in supporting ELLs through joining communities and posting comments through forums or on videos themselves. Schools and districts may have limited

funds for professional development but could encourage use of videos to support teachers in enhancing skills for ELL instruction. Looking at the semantic area of self-directed learner control, this resource is accessible for those who have Internet connection, and is an online site strictly for teacher use. Furthermore, self-directed learners will need to employ the algorithmic aspect of control in evaluating and determining what videos to use while learning on TeacherTube. Also, the resource is economical, as it is completely free. Given these points, using TeacherTube is a good option for independent learning as well as developing community learning. There are a few studies showing effective and positive results using YouTube to learn English as a second language, particularly for students in foreign countries (Chao & Lo, 2011; Ming, Mahmud, & Razak, 2012; Watkins & Wilkins, 2011). Considering the needs of districts, schools, and self-directed teachers who are committed to supporting ELLs, using TeacherTube videos as a resource may prove useful in helping to successfully educate diverse learners.

Quality Instructional Video Design Characteristics

One way to assess the quality of videos on YouTube for instruction is by looking at instructional design principles for multimedia productions. The Cognitive Theory of Multimedia Learning by Richard Mayer is a commonly used framework for studies regarding the design of instructional videos (Fan & O'connell, 2011; Ibrahim, 2011; Kay, 2012a; Kay, 2012b; Phan, 2011). Based on research since 1989, the theory was introduced in 1996, advising designers of multimedia instruction to be sensitive of how people process information (Mayer, 2014). The theory uses three cognitive science principles: 1) dual coding theory: humans process information using two channels, audio and visual, 2) limited capacity: that the audio and visual channels have limited capacity for processing, and 3) active processing: that individuals actively learn by organizing and selecting seemingly coherent and relevant information that is received (Mayer, 2014). In addition, there are three locations in which information is stored by the brain: sensory memory, where incoming pictures and words are briefly held; working memory, where selected incoming information can be manipulated; and long term memory, where information is permanently stored (Mayer, 2014). Information is learned when it is stored in the brain's long term memory, a process that includes selecting words and images, organizing those words and images, and then integrating that information by connecting it with prior knowledge (Mayer,

2014). To maximize student learning, multimedia must be designed so that essential processing (the brain's selection of essential information) and generative processing (the brain making sense of the information) can take place without unnecessary over loading on the brain's working memory capacity (Mayer, 2014). Extraneous processing occurs when the working memory is at full capacity processing information unrelated to the targeted learning goal (Mayer, 2014). The Cognitive Theory for Multimedia Learning, therefore, provides understanding on how to minimize extraneous processing while maximizing essential and generative processing for the learner (Mayer, 2014).

Since its original publication, the theory has evolved to recommend 8 principles for reducing extraneous processing in multimedia instruction (Clark & Mayer, 2011). The eight principles are: 1) coherence: reduce extraneous material, 2) signaling: highlight essential material, 3) redundancy: do not add on screen text to narrated animation, 4) temporal contiguity: present corresponding narration and animation at the same time, 5) segmenting: breaking down the instruction into short events that the learner can refer back to, 6) modality: mixed mode presentation of information is better than a single mode presentation of information; 7) multimedia: learning with words and pictures is better than learning with words alone; and 8) personalization: people learn more deeply when information is presented with more of a conversational versus formal style (Mayer, 2014). Instructional videos that incorporate these principles will effectively increase student learning (Mayer, 2014).

There are, however, a few criticisms of the theory itself, and Mayer "is careful not to claim that his research should be seen as the final word on instruction in the situations he is trying to measure" (Sorden, 2014, p.18). Some criticisms include that Mayer's principles apply mainly for instructional videos focused on understanding mechanical and physical systems (Lohr & Gall, 2004). Also, Mayer's research was primarily conducted in controlled lab-like settings, questioning the principles' validity in a more real-world environment (de Jong, 2010). Given the limitations of this theory, it is important to consider other design principles as well to provide clearer, more effective criteria to measure quality instructional video.

Given the popularity of video use for instruction, a number of universities are investing in research to develop quality video instruction (Hansch, Hillers, McConachie, Newman, Schildhauer, & Schmidt, 2015; Kay, 2012a; Thomson, Bridgstock, & Willems, 2014).

Through developing their video instruction, each of these studies discovered a set of video characteristics that seemed to work best for their students while learning. Many of these video characteristics reflect Mayer's multimedia design principles. Kay (2012a) developed a theory-based model for creating instructional video podcasts to create 59 videos teaching pre-calculus for 856 university students. An intensive literature review on worked-example videos informed the development of Kay's model (2012a). Table 2.1 shows a list of the model and the 16 characteristics that emerged of quality instructional video characteristics. It is important to note that these characteristics are meant for math-based instruction and are therefore, centered on solving math problems. The elements of minimizing cognitive load and using different types of visuals are reflected in principles 1-7 of multimedia design.

Thomson et al. (2014) analyzed the instructional video making experiences of faculty members at University of Australia and developed four principles for effective instructional video making:

1. Give context and align purpose: the context and objective of the video should be clearly signposted to ensure maximum meaning making and learning throughout the instruction. Any other information not directly related to the purpose of the video should not be included, except multimedia that may help the learner understand the concept better.
2. Tell (show) a story: A well planned story that shows the narrator's own experiences that can help the learner understand the concepts is useful, with minimum display of words. Having words and visual may be redundant and irritating to the learner. Occasional cueing is good to use to highlight key concepts.
3. Present with authenticity: It is important that whoever is presenting in the video does so with fluidity, is conversational, and confident so as to confirm expertise and credibility.
4. Keep it short and to the point: The optimal length of any instructional video is less than 5 minutes. Because viewer abandonment rates are high on online video, it is important to get to the point quickly. The most important concepts should be presented first. If there are a number of concepts, it is important to structure the content around a number of shorter videos than creating one long video.

Table 2.1. *Key Components of Model for Developing Video Podcasts (Kay, 2012a)*

Component
Establishing the Context
1. *Problem Type*: An appropriate problem is chosen for the concept being presented (e.g., focuses student on specific concept, numbers are select carefully)
2. *Clear Problem Label:* The problem is clearly labeled and displayed at the beginning of the clip (e.g. clear descriptive title that gives problem a context, problem is displayed)
3. *Background Information:* The context and type of problem was clearly articulated at the beginning of the clip
4. *Explain Key Elements*: Key elements clearly explained before trying to solve it (e.g. made sure that the listener understood what was being asked). Don't not simply read the problem – highlight key features that learners should attend to
Creating Effective Explanations
5. *Show all the Steps:* All key steps and processes were articulated while they were being done (e.g., no hidden steps)
6. *No Mystery Steps*: The reason for doing key steps was explained (so students can understand why a procedure/step is being used)
7. *Use of Visuals:* Diagrams /pictures/tables used in the clips helped organize /clarify / illustrate key aspects of the problem.
Minimizing Cognitive Load
8. *Readability*: The writing in the clips was easy to read.
9. *Write down key information*: The important elements (terms /definitions /formulas/ procedures) were written down as needed (not all at once).
10. *Layout:* The layout of the clips was easy to follow (e.g., well organized, not crowded, even horizontal lines)
11. *Highlighting*: Key areas of the problem were visually emphasized (e.g., different colour, highlighting, circled)

These ideas are again reflected in the previous principles and models. Mayer's principle 5 (segmenting) is much reflected in Thomson, et al.'s principle 4. Also, the idea of presenting with authenticity is similar to Mayer's principle 8, personalization. All of the video design principles agree that using multimedia to show and explain the concept better is important, but that it is important not to over explain or be redundant, as in Thomson, et al.'s principles 1 and 2 and Mayer's principles 1-4 and video podcast model's minimizing cognitive load.

A Framework for Assessing Instructional Online Video

In 2012, Morain and Swarts developed a framework for assessing instructional online videos using the constant comparative method with previous literature and coding. Taking 46 YouTube videos, a team coded for principles of video design much like those described by Thomson et al. (2014), Clark and Mayer (2011), and Kay (2012a).

Table 2.2. *Framework for Assessing Instructional Online Video*

Physical Design	Cognitive Design	Affective Design
Accessibility Video allows the viewer to focus on areas of the screen that are relevant to the instruction at hand.	**Accuracy** Content was presented without errors of fact or execution.	**Confidence** Narrator inspires confidence by presenting self as knowledgeable and skilled. Narrator may also inspire confidence by association with a reputable organization.
Viewability Production quality (audio, video, text) is sufficient to make content tolerably watchable.	**Completeness** Content was presented in an organizing superstructure and with sufficient detail so as to be accurately reproduced and broadly applied.	**Self-Efficacy** Video persuades viewers that they can successfully complete the tasks that are the focus of instruction.
Timing Video is paced to make it easy for viewers to follow content.	**Pertinence** Content was related to the instructional goal, and it had an instructional purpose.	**Engagement** Video is designed to interest and motivate users.

Principles related to mode received a coder agreement rating 92.7% (Morain & Swarts, 2012). Principles related to the instructor's rhetoric received a coder agreement rating of 78%, and as a result, the coders modified the codes to include parentheticals to specify and create more precise coding (Morain & Swarts, 2012).

The framework consists of thee general categories: physical design, cognitive design, and affective design (Table 2.2). Within each category are objectives that make up the variables to be measured for instructional online video quality. For physical design, these are: accessibility, viewability, and timing (Morain & Swarts, 2012). For cognitive design: accuracy, completeness, and pertinence (Morain & Swarts, 2012). Lastly, affective design includes: confidence, efficacy, and engagement (Morain & Swarts, 2012). The YouTube videos were sorted to be of good, average, or poor quality by its number of views and user ratings (Morain & Swarts, 2012). Then, coders looked for emerging characteristics common to the videos in each group and generated a list wherewith to base the assessment rubrics found in the Appendix B (Morain & Swarts, 2012).

Conclusion

Overall, a changing student population calls for a change in teaching practices. Evidence shows that teachers feel unprepared by their teacher education programs to teach English language learners (Pawan & Craig, 2011; Webster & Valeo, 2011). Because these programs are newly developing ELL support training, professional development is an important source for increasing in-service teacher knowledge. As discussed, collaborative opportunities through professional learning communities and communities of practice are effective. Schools and teachers are most successful at supporting ELLs when they work together, with communities, and when administration supports collaboration and professional development as part of the school culture. However, in situations where teachers are left to themselves to gain the skills necessary to teach ELLs, self-directed learning opportunities bring students, teachers, and schools added success. Paul Bouchard's (2009a, 2009b) Four Areas of Learner Autonomy provides a conceptual vehicle for understanding how self-directed teachers find, evaluate, and use resources.

One resource about ELL instruction is the U.S. Department of Education's 2012 meta-analysis literature review on ELLs. A section of the report is dedicated to expounding on

different instructional techniques for teaching English as a second language. These strategies make up the following categories: vocabulary instruction and word recognition, group and oral interaction, teaching learning strategies, giving feedback, scaffolding learning and providing English learning with content. The report recognizes that there are unlimited ways to infuse ELL teaching strategies in the classroom and simply assert that the most effective fall under those general categories.

When it comes to delivering such information, learning online is a viable solution for self-directed teachers to gain skills. YouTube and TeacherTube are two free sharing sites where users can create and spread ideas through video. YouTube is generally more popular than TeacherTube as it is used by a wider audience and for more varied purposes. TeacherTube's goals are strictly for educational purposes, relying on teacher participation to both manage and contribute videos. There are more opportunities on TeacherTube to collaborate with other teacher professionals by joining communities and commenting since the website narrows its service to teachers alone. While there are instructional videos on these sites, not all of them may be effective for learning. Research suggests that YouTube videos in particular often lack quality content and instructional design. Since there is less research on TeacherTube, it may be important to assess the quality of videos on this site as well, particularly since it is targeted to helping teachers. Understanding the characteristics of quality instructional videos is essential to designing and measuring how good videos on TeacherTube and YouTube would be. There are a few design theories that are useful to note by Clark and Mayer (2011), Kay (2012a), Morain and Swarts (2012), and Thomson et al. (2014) in creating videos for TeacherTube and YouTube. Looking at the content and design quality of Teachertube and YouTube videos, in parallel with examining how these videos are rated through their comments and user statistics, may provide a better understanding of processes used by self-directed learners to evaluate resources available to them in such environments and how their evaluations align with quality ratings based on content and multimedia design.

The following chapter will discuss the methodology of this study, in particular the research design, process, and conceptual framework being used. TeacherTube and YouTube videos will be gathered and analyzed for content in relation to the instructional strategies for ELLs from the LIEP report as well as quality video design characteristics from Morain and

Swarts' (2012) rubric for assessing instructional video. Looking closely at the quality of videos being shared on TeacherTube and YouTube for teaching ELLs and instructional design will aid schools and teachers in knowing to what extent they can be used for personal and collaborative professional development. In addition, by looking at statistics and comments provided by the video viewers, we gain information about how choices of videos and their evaluation of them align with the researcher's content and design quality ratings. Thus we may gain a better understanding of the algorithmic area of self-directed learning as it plays out in environments such as TeacherTube and YouTube. Online learning tools such as TeacherTube and YouTube should be considered in the worthwhile endeavor of increasing ELL academic success.

CHAPTER 3. METHODOLOGY

This research used content analysis strategies to examine resources on TeacherTube and YouTube regarding English language instruction to determine their alignment with best practices in ELL instruction provided by the U.S. Department of Education in *Language Instruction Educational Programs (LIEPs): A Review of the Foundational Literature* (LIEP report) (U.S. Department of Education, 2012). It also analyzed the resources using a framework and rubric identifying characteristics of quality instructional video (Morain & Swarts, 2012). In addition, the research looked at viewing statistics and teacher comments and ratings to see how viewers used and evaluated these resources (algorithmic area of self-directed learning) and compared these user ratings with the quality ratings given for video content and design. This chapter describes the methods and rationale of the research design used to accomplish the study's purpose.

Research Design

The content analysis method is a research technique for making inferences from a "text" keeping the contexts of its use in mind (Krippendorf, 2013). According to Krippendorf (2013), a text is "meaningful matter" that "means something to someone…is produced by someone to have meanings for someone else, and these meanings therefore must not be ignored and must not violate why the text exists in the first place" (p.25). The earliest content analyses traces back to inquisitorial pursuits by the Church in the 17th century (Kripppendorf, 2013). This is not surprising considering many religious edicts are derived by a holy book or written word. After the invention of the printing press, the Church became worried about the demoralization of circulated public content (Groth as cited in Krippendorf, 2013). Analyzing the content of such text would therefore, be an active pursuit not only for holy text but also for newspapers. In fact, the first known dissertations on newspapers were defended by those pursuing degrees in theology (Krippendorf, 2013).

Later, in the early 20th century, mass production of newsprint created large markets and interest in public opinion (Krippendorf, 2013). Journalism emerged, leading the way for

establishing ethical standards and research on the newspaper (Krippendorf, 2013). Analyzing the content of these new means for mass communication began to take hold. Social science also emerged as academics saw correlations between mass communication and public opinion (Krippendorf, 2013). Therefore, content analysis became an important means for understanding social phenomenon (Krippendorf, 2013).

The use of the word "text" is not intended to "restrict content analysis to written material," but can also apply to "works of art, images, maps, sounds," and more (Krippendorf, 2013, p.25). Therefore, digital, computer, or Internet content also falls under the definition of "text". The very premise of sharing information on the Internet or creating a digital or computer text indicates that there is an intended audience, and therefore production of meaningful text. Videos on TeacherTube and YouTube are no different. Since 2007, due to the efforts of a 14-year veteran teacher and his high-tech brother, TeacherTube has been providing a site "where teachers can post videos" (TeacherTube, 2015a). "TeacherTube community members are a major part of the evolution of the site" as they are encouraged to upload educational content, use its rating system to show appreciation for videos of value, and can flag inappropriate videos (TeacherTube, 2015a). Content analysis was the best choice for the purpose of this study because this research method provides a systematic procedure for analyzing the information found in TeacherTube and YouTube videos.

Investigating the credibility of strategies shared on TeacherTube and YouTube provides information as to whether or not self-directed learners can rely on the website for knowledge and professional development. It can help educators understand how well aligned the content is with expert recommendations. Schools, districts, and teachers could benefit from this information to make decisions about the use of the website for their own professional development efforts. Understanding how effective these videos are in sharing information (instructional design) is recognizing the meanings this particular text has and why it exists in the first place.

The type of analysis used in this study stayed true to one of the original definitions of a content analysis. Berelson (as cited in Krippendorf, 2013) was one of the first to provide a definition of content analysis, and defined it as an objective, systematic, and quantitative description of the content of a type of communication. While not all content analyses are or must be quantitative (Krippendorf, 2013; Neuendorf, 2002), this approach to content analysis

was that of an integrative content analysis looking at the frequency of variables based on expert knowledge of ELL teaching strategies and instructional video design principles within each video (Neuendorf, 2002). The information gained was used to determine relationships or patterns between the quality of the TeacherTube and YouTube videos and the user ratings and views of each video.

Conceptual Frameworks

The conceptual framework for this study was centered on Bouchard's Four Areas of Learner Autonomy among self-directed learners (2009a, 2009b). According to Bouchard's model, self-directed learners have control over how they evaluate and find learning resources most effective in achieving their learning objectives, which is the algorithmic aspect of learner autonomy (2009a, 2009b). shows the conceptual framework in action. Are teachers, as self-directed learners, able to apply the algorithmic aspect to select effective online resources for learning about teaching ELLs (TeacherTube and YouTube video ratings and views)? Effective ELL video resources are those in which (a) content is aligned with expert recommendations (LIEP report), and (b) characteristics of quality instructional videos (Morain & Swarts, 2012).

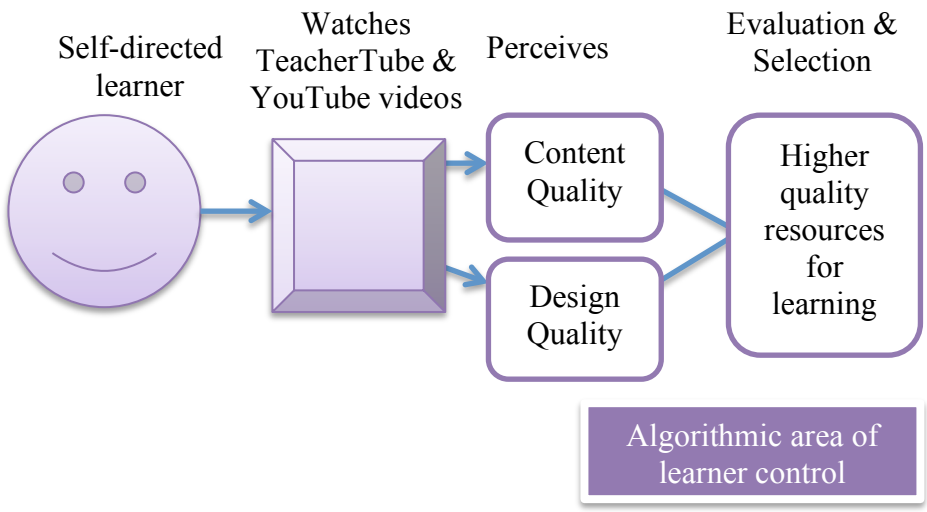

Figure 3.1. Conceptual framework in action

Role of the Researcher

The role of the primary researcher of this study was to select the videos that would be analyzed, develop the instrumentation used for analysis, and conduct the analyses. Peer coders were trained by the primary researcher for reliability and validity testing to refine the codebook used for data collection.

As a secondary teacher with four years of experience working in public education and an additional year working in a blended learning charter school, I, the primary researcher, understand and am aware of the role teachers play in shaping student learning experience. I am not certified to teach English as a second language and have limited training in ELL instruction, but have worked with a number of students with limited English proficiency while teaching history and common core performance standards, requiring students to learn reading, writing, research, and speaking skills. I also am aware of the challenges teachers face in having high demands for teacher and student performance through standardized testing and school evaluations, while having limited resources at their disposal. My interest in this study is to validate and discover free online resources existing in support of teacher instruction for English language learning. I understand the challenges teachers and families experience in finding resources that can aid in building knowledge. I often turn to online resources myself because it helps to build skills and knowledge for free and with easy access. Furthermore, it's easy to share these resources with friends and stakeholders because they can access it easily and with little to no cost. In screening for video relevant to these teaching experiences, I was careful to include video demonstrating strategies that a teacher with limited class resources would be able to replicate and find meaningful.

Screening Protocol

The message units for this study were selected videos from TeacherTube and YouTube. These units provided a strong set of data since they had a first-order linkage. When it comes to integrative content analysis, first-order linkage is the strongest type of unit of analysis (Neuendorf, 2002). Defined, first-order linkage are the units of analysis in which, "the precise messages analyzed in the content analysis are the ones created by the sources under study or are the ones accessed by the receivers under study" (Neuendorf, p.61). The messages within the

videos being analyzed are the same as those being accessed by the receivers in this study because the videos themselves are located on a free, public website aimed at providing teachers an online video sharing communities, TeacherTube and YouTube. Those who created the videos are the ones who uploaded them online and those who view them are those seeking such information and choose to view them.

Screening for the unit set began by first searching on TeacherTube for "ELL," which yielded 538 videos. Some videos were advertisements that claimed to show instructional strategies, but rather included testimonials on a product rather than a demonstration of a teaching strategy and were eliminated. The phenomenon being studied is K-12 teachers as self-directed learners selecting sources for professional development, so choosing videos that were current and directed for K-12 classroom instruction was appropriate.

The videos were briefly scanned to identify those videos targeted for K-12 classroom instruction. 28 videos were estimated to fit these parameters. Screening for videos in this way was sufficient because the sampling unit was "large enough to represent the phenomenon under investigation" (Neuendorf, 2002). Each video had a different structure. Some were presentations with a narrator explaining a skill, while other videos were simply recordings of a teacher showing a skill rather than narrating and explaining. Videos were categorized for these differentiations after they were all coded. Videos screened for the sample were inputted into a data collection matrix in one screening time period (see Appendix A). TeacherTube videos found on March 16, 2016 were the ones used for analysis. New videos are uploaded on a daily basis, so it was important to use only videos found during the time period being used for screening. The date during which the screening took place was recorded on the data collection matrix.

Next, YouTube video samples were gathered May 1st, 2016 by typing in a more precise search phrase "ELL classroom instruction." Since YouTube has a wider audience and pool of users, there were many more videos that populated. Finding videos that fit the study parameters was much easier.

Each video was transcribed and the units of analysis from these messages were 15-second intervals of each video. Any nonverbal behavior was noted anecdotally per analysis unit. According to Bales (1950), "the smallest discriminable segment of verbal or nonverbal behavior"

that a coder could code "under conditions of continuous serial coding" should influence the selection of data collection units (p.37). In a given four minute video, 15 seconds allowed enough time to record variables for analysis.

A number of variables were recorded for each video, including: (1) video title, (2) length of the video, (3) author, (4) years ago uploaded by creator, (5) url link to video, (6) type of video, (7) date located by researcher, (8) number of views, (9) number of likes, (10) number of dislikes, (11) overall rating (for TeacherTube videos only), (12) number of positive comments, (13) number of negative comments, and (14) anecdotal notes on comments. See a completed matrix of variables recorded for one of the videos data was collected for (see Appendix A).

Instrumentation and Procedures

Instrumentation used was a researcher-developed codebook of variables counted during the coding process (see Appendix B). The codebook guided the research in answering the following questions:

1. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms align with ELL strategies described in the United States LIEP report (2012); (Content Quality of Videos - CQ)?
2. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms score highly using the Morain and Swarts (2012) instructional video assessment rubric; (Instructional Video Design Quality – IDQ)?
3. How do self-directed teacher learners rate selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms (User Ratings – UR)?
4. What is the relationship between the video user ratings (UR) and the video quality ratings (CQ and IDQ) as a measure of the algorithmic aspect for self-directed learners?

In the process of coding, each content quality variable, or variables from the LIEP report was flagged for being present or not within the analysis unit of each video. Then, if a content quality variable was not present, it received a score of 0. Otherwise, if a content quality variable was present, it received a score of 1, 2, or 3 to reflect the extent to which that strategy was being demonstrated in the video with a three representing the most presence (see Appendix B). Each variable had different criteria for whether a video receives a score of 1, 2, or 3. The criteria were

determined by reviewing the LIEP report and how each variable was explained through examples and description. Based on each variable's description in the report, an ordered value system of 1, 2, or 3 was determined. For most variables, the score corresponds to the number of strategies present in each video matching the variable description. For example, a video describing how to use graphic organizers for learning vocabulary and no other teaching technique received a score of 1 for the "vocabulary" variable. A video describing the use of graphic organizers and gaming to learn vocabulary received a score of 2, and if a third strategy was present for teaching vocabulary, the video received a score of 3. This three-point rubric is modeled after the Morain and Swarts instrument for assessing instructional video (2012).

The researcher received feedback about the six strategies in the LIEP report from five practitioners trained in or currently teaching English as a second language. The five practitioners were made up of two high school teachers, two middle school teachers, and one elementary school teacher. Although all the teachers that gave feedback are certified in teaching English as a second language, only one of the teachers is currently teaching mainstream English rather than English as a second language. The ELL teachers approved these strategies and recommended building relationships with the students as another important aspect of supporting English language learning. The practitioners described that understanding the students' challenges, building trust, and catering lessons to their unique learning goals were important parts of building relationships and being effective in their language learning.

Therefore, a seventh category was added called cultivating student relationships. Content quality ratings were given according to the level of presence (1, 2, or 3) for each of the aspects found within the TeacherTube and YouTube videos. Any video showing teachers using one of the six LIEP strategies to build a lesson around a student's talents, needs, or culture received a one. A score of two was given to videos using two of the six strategies, and a score of three was given to a video using three strategies. For example, a video with a score of one in cultivating student relationships encouraged teachers to get to know their students and understand their frustration when learning new English vocabulary. A video that received a score of three in cultivating student relationships showcased a teacher who held parent and student workshops in his classroom to build community amongst parents and teaching them several different ELL strategies to practice at home.

The design quality variables outlined in the Morain and Swarts (2012) rubric for assessing instructional video was not marked present or not present, but simply scored a 1, 2, or 3 (see Appendix B). For this category of variables, Morain and Swarts (2012) had specific criteria for whether a video received a 1, 2, or 3 for each variable. For audio, a score of 1 was given for videos that had an unclear audio track and little to no use of voice over. A score of 2 was given for videos that used voice over but not effectively. A score of 3 was given for videos that had a clear and effective use of voice overs and audio. Each variable has its own criteria for a score of 1, 2, or 3, mainly based on the quality of the variable's presence in each video. The variable "viewability" scores were assigned based on the video's image clarity. A video that was illegible to view received a score of 1 while a video with high definition images received a score of 3. The design quality variables were characteristics identified by Morain and Swarts (2012) that make a good instructional video: audio, viewability, pacing, accuracy, organization, pertinence, confidence, self-efficacy, and engagement. If they were not present, they received a score of 0. Each video's instructional design rating is an average of all the design quality variable scores.

The codebook used is in Appendix B and was tested for inter-coder reliability. The process went through two rounds of coding with two different peer coders. In the first round, a peer coder was trained and analyzed three videos. Interpreting the strength of the alpha score was as follows: less than 0 poor, 0 - .2 slight, .21 - .40 fair, .41 - .60 moderate, .61-.80 substantial, and .81 – 1 near perfect (Landis & Koch, 1977). After the coding was complete, the primary coder and peer coder's video scores were compared using Krippendorf's alpha yielding near perfect agreement scores except for the design quality variables: "audio", "confidence", and "self-efficacy". Peer and primary coders discussed the weakness of the variables and concluded it was a matter of the different elements within each definition and rubric conflicting. For example, in the area of confidence, a video could have smooth narration, but not mention the narrator credentials. In the area of self-efficacy, a video could have some explanation but not reassure the viewer or make a peer connection. The peer coders discussed what was important to each overall, bringing to each other's attention aspects of the rubric that were not previously considered. Once the additional detail was discussed, the codebook went through a second round of inter-reliability coding with a different peer coder. This time, primary and peer coder analyzed four videos, transcribed each video, and spent more time on training. The

Krippendorf's alpha scores for each variable were much better with the lowest score being .9 (Appendix C).

Data Collection

Once the videos were selected using the screening protocol described, a data collection matrix was used to keep track of the sample units. Appendix A shows an example of what the data collection matrix looked like. Each video received a number. The title recorded was the title given by the source for the video. The length was easy to record as well since it is given information during the video search. The author recorded was the given TeacherTube or YouTube username listed below the video. TeacherTube and YouTube videos had different information available regarding the date videos were posted. TeacherTube videos had the years ago a video was posted while YouTube had the actual date. Therefore the "years ago a video was posted" was recorded. The link was recorded so that the video could be easily accessed on multiple occasions.

The type of video was also recorded. The video types included teacher interviews, conference presentations, Power-point or slideshows with voiceovers, teacher verbal reports or sharing, classroom observation recordings, webinars, and edited combinations of classroom videos, visuals, and graphics, with narration or voiceovers. These various types were categorized into five groups: (1) videos of classrooms only, (2) videos of teachers talking/sharing (included teacher interviews and teacher verbal reports/sharing), (3) videos of formal presentations (included conference presentations and webinars), (4) visuals with voiceovers (included Power-points or slideshows with voiceovers or narration), and (5) edited combinations of classroom videos, visuals, and graphics, and narration or voiceovers.

Recording the date located was also important to note, since videos may be deleted from time to time and new videos could resurface during the screening and collection phase. Videos located on the given screening day were the only videos used for the study. This is the date that was recorded under "date located." Therefore, the time period by which these videos were screened and defined needed to be an uninterrupted time period whereby the sampling units could be quickly gathered and recorded in the data collection matrix.

Additionally, the data matrix included important notes for describing the user interaction with each video. The number of views was recorded—information given also at the bottom right of the video. The number of likes, number of dislikes, overall rating (TeacherTube only), and number of comments were also recorded so as to measure the user ratings of each video. Overall ratings were only relevant for TeacherTube as YouTube does not allow users to rank their videos that way. In developing the components of video instruction used for the assessment rubric, Morain and Swarts categorized high versus low quality videos according to user ratings and number of views (2012). The assumption made was that the user's impression of each video is represented in the number of its views and ratings (Morain & Swarts, 2012). For TeacherTube and YouTube, this information is located right below each video indicated by a "thumbs up" (likes) and "thumbs down" (dislikes) icon. For TeacherTube only, the overall rating was a 5-star icon prompt. Users could assign a number of stars they'd rate the video out of 5 total. Additionally, the comments found for each video were noted. The comments were given a score based on positive or negative aspects. While the number of likes, dislikes, and positive and negative comments were intended to be a factor in the user ratings, there were hardly any likes, dislikes, or comments for all 56 videos. Therefore, user ratings are equivalent to the number of views each video received.

The data was initially stored in an excel spreadsheet located on the researcher's computer. The videos were labeled by name and date, and transcriptions made before coding. Data were later entered into PSPP.

Data Analysis

According to Bales (1950), "the smallest discriminable segment of verbal or nonverbal behavior" that a coder could code "under conditions of continuous serial coding" should influence the selection of data collection units (p.37). In a given four minute video, 15 seconds allowed enough time to record variables for analysis. The video was transcribed word for word, as well as any non-verbal signals, cues, or visuals noted as anecdotal information. The 15-second transcriptions were then noted for any instructional strategy and design principle variables present from the codebook. The Learning Mathematics for Teaching Project measured mathematics instructional quality by coding recorded videos for seven constructs (2011). The

study focused on measuring the richness of mathematics guidance in a lesson by coding for whether the construct was present and appropriate for the lesson recorded (Learning Mathematics for Teaching Project, 2011). Each video in this study was assigned a three-point rating to measure the extent to which each variable was present. Also, the user rating was based on the number of views each video received and in the case of YouTube, the number of likes and dislikes received as well.

Determining user ratings by a video's number of views aligns with literature suggesting that learners that use online resources base their decisions on the credibility of the source and largely select them based on their recommendations by peers and personal friends (Halverson et al., 2010; Clements & Pawlowski, 2012). According to Lin, Michko, and Bonk (2009), the "number of views directly influences a video's ranking", discussing that by and large YouTube users watch videos referred by and with friends rather than from searching for specific video on their own. Another study by Lin and Michko (2010) reiterates that although it considers itself a social networking site, there are few tools on YouTube that allow individuals to interact and determine video ranking other liking, disliking, and making comments. Even then, few users take the time to rank video and make comments (Lin & Michko, 2010). Therefore, many users of YouTube get referrals and determine credibility of videos outside of the site itself (Lin & Michko, 2010).

Validity

There were controls in place throughout the study to ensure "validity …encompassing the criteria of reliability, accuracy, and precision" (Neuendorf, 2002). According to Krippendorf (2013), there are three different types of reliability: stability, replicability, and accuracy. The "degree to which a measuring or coding procedure yields the same results on repeated trials" was addressed with inter-coder testing (Krippendorf, 2013, p.271). Also, the videos being analyzed were videos screened on a specified day or time period, meaning the videos that match the same criteria throughout the analysis process were used. The replicability, or "degree to which a process can be reproduced by different analysts, working under varying conditions, at different locations, or using different by functionally equivalent measuring instruments" was ensured by the detailed screening protocol and codebook in place. Two rounds of inter-coder reliability

testing yielded an average of 87% coder agreement. The codebook also underwent an expert review to ensure the study's accuracy in measuring what it intended to measure. Finally, a second inter-coder testing was completed after all the data was collected to validate the final results. This test yielded an average of 90% coder agreement. Appendix D shows the final agreement scores for each variable in the codebook after all the data was collected.

Product

The data measuring video content quality and instructional design quality was represented quantitatively, per analysis using the codebook. The data measuring self-directed learner algorithmic selection was collected quantitatively via user statistics. These data were then compared to examine correlations or patterns in how the self-directed learner user ratings for each video aligned with that video's content and instructional design quality ratings.

Summary

Ultimately, this content analysis attempted to understand the general video quality of instructional videos on TeacherTube and YouTube regarding English language learning teaching techniques and how well users apply the algorithmic aspect of self-directed learning to select videos most effective in achieving their professional development goals. The research questions of this study sought to quantify instructional practices described in the United States LIEP report and design principles for instructional video manifested on TeacherTube and YouTube videos regarding English language instruction for American K-12 classrooms. Findings from this study can help educators and other stakeholders understand the quality of information self-directed learners select in online video sharing communities when they need resources for teaching English language learners. Additionally, findings may give insight on the ability of teachers as self-directed learners to apply algorithmic aspects of learner control to identify and evaluate high quality learning resources. Chapter 4 will review the findings from the study.

CHAPTER 4. FINDINGS

The purpose of this content analysis was to examine the content and design quality of videos providing instructional strategies for English language learner (ELL) teachers on TeacherTube and YouTube and identify relationships if any, between quality ratings and views of the videos.

The research questions of this study were:

1. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms align with ELL strategies described in the United States LIEP report (2012) (Content Quality of Videos - CQ)?
2. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms exhibit high quality ratings using the Morain and Swarts (2012) instructional video assessment rubric (Instructional Design Quality - IDQ)?
3. How do self-directed teacher learners rate selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms (User Ratings – UR)?
4. What is the relationship between the video user ratings (UR) and the video quality ratings (CQ and IDQ) as a measure of the algorithmic aspect for self-directed learners)?

To answer the first and second research questions, videos were rated for quality using a researcher-developed codebook for content and instructional design quality. Frequency data were then gathered for each variable within the codebook. The content quality variables are the strategies listed in section four of a 2012 report by the United States Department of Education on LIEPs, or Language Instruction Educational Programs. The design quality variables were based on Morain and Swarts' (2012) framework for assessing instructional video. The user ratings of each video were gathered and correlated with the content and design quality ratings to see if video users were able to apply algorithmic aspects of self-regulated learning to select and rate videos with high quality content and instructional design. Data were gathered in the same way for TeacherTube and YouTube videos and correlation patterns were investigated. The data of both YouTube and TeacherTube were further compared to determine any patterns between the two sites.

Fifty-six videos were analyzed, 28 each from TeacherTube and YouTube. There were at least five times the number of YouTube videos that populated when searching for "ELL instructional strategies" compared to TeacherTube. Therefore, identifying videos that met the exact specifications of length and relevance was easier to do with YouTube videos than with the TeacherTube videos. Since finding videos that were relevant to the goals of this study took priority over the length of the videos and the year they were published, a few of the TeacherTube videos were older and longer than the YouTube videos selected.

Description of the Sample Sets

A total of 538 videos populated when searching for "ELL" videos on TeacherTube. Filtering videos for relevance (e.g. removing those that were marketing) left only 28 videos for analysis. The length of each video varied widely from 48 seconds to just over 23 minutes. One quarter of the TeacherTube videos were published within the last three years, with only one published in the last year. The rest were uploaded four to five years ago.

Only two TeacherTube videos were recordings of formal presentations, three videos were unedited recordings of a teacher conducting class instruction, one video was a series of visuals with voiceovers, and one was a well edited video with example footage, visuals, and voiceovers. The rest of the videos were recordings of a teacher narrator explaining a given strategy with little to no demonstration or visuals (e.g. conference presentation).

When searching for "ELL" on YouTube 480,000 videos populated. Therefore, the search phrase was changed to specify "ELL classroom instruction." This yielded still 4,790 videos, which is why it was much easier to filter not only for relevance, but also for video length (under 4 minutes) and publishing date. Filtering it down for short videos cut down the amount to 1,990. The first 28 videos that were relevant and published within the past 5 years were selected. Therefore, all the YouTube videos used in the study were under four minutes, the shortest being just over one minute and the longest being 3 minutes and 46 seconds. About half of the 28 selected YouTube videos were published in the last 3 years, 10 of which were published within the year. The video types were similar to those found in TeacherTube with the addition of Powtoon videos with voiceover. The Powtoon videos were categorized in the fourth group, visuals with voiceovers. Table 4.1 describes the two video sets.

Table 4.1. *Descriptive Data of TeacherTube and YouTube Videos (N=56)*

VIDEO LENGTH	# < 1 minute	# 1-4 minutes	# 4:01-7 minutes	# 7:01-10 minutes	> 10 minutes
TeacherTube	3.6% (N=1)	71.4% (N=20)	7.1% (N=2)	10.8% (N=3)	7.1% (N=2)
YouTube		100% (N=28)			
TIMEFRAME UPLOADED	# 1 years ago or less	# 2 years ago	# 3 years ago	# 4 years ago	# 5 years ago
TeacherTube	3.6% (N=1)	0% (N=0)	21.4% (N=6)	28.6% (N=8)	46.4% (N=13)
YouTube	35.8% (N=10)	3.6% (N=1)	17.8% (N=5)	21.4% (N=6)	21.4% (N=6)
VIDEO TYPE	Video of classroom only	Video of teacher talking/ sharing	Video of formal presentations	Visuals with voiceovers	Edited combination
Teacher Tube	10.7% (N=3)	75% (N=21)	7.1% (N=2)	3.6% (N=1)	3.6% (N=1)
YouTube	0% (N=0)	50% (N=14)	0% (N=0)	28.6% (N=8)	21.4% (N=6)

While about half (50%) of the YouTube videos were of teachers talking into the camera and sharing about an effective instructional strategy, 75% of TeacherTube videos were of this type. No YouTube videos were simply recorded observations with little editing and only three (10.7%) TeacherTube videos were of this type. Over a quarter (28.6%) of the YouTube videos were power point or powtoon videos with voiceovers while only one (3.6%) of the TeacherTube video was of this type. No YouTube videos were recordings of formal conference presentations, while two (7.1%) TeacherTube videos were, one a webinar. Less than a quarter (21.4%) of the YouTube videos were well-edited recordings of classroom examples with narration, while only one (3.6%) of the TeacherTube videos was of this type.

Content Quality Ratings

The first research question of the study was to determine to what extent the selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms aligned with ELL strategies described in the United States LIEP report (2012).

According to the LIEP report, six main categories of teaching strategies are important for effective English language learning: 1) strategies aimed at teaching students vocabulary, 2) activities and methods that allow students to work in groups and practice the language orally, 3) engaging students in metacognitive thinking to help them monitor and strengthen their language acquisition, 4) giving regular and direct feedback, 5) creating resources and structures that help scaffold student learning with the intention of gradually removing them, and 6) teaching the English language while delivering content-based instruction. These were shortened for coding to (1) vocabulary, (2) grouping, (3) metacognitive strategies, (4) feedback, (5) scaffolding, and (6) content-based instruction. A seventh category was added called cultivating student relationships based on feedback from five practitioners trained in or currently teaching English as a second language.

TeacherTube Content Quality Ratings

The researcher compared the videos against a rubric created from the LIEP report (Appendix B). Table 4.2 summarizes the extent that areas recommended in the LIEP report were evident in the TeacherTube videos. Also included is the overall content quality rating of videos calculated by averaging the means of the variables.

As can been seen in Table 4.2, the two topics covered to some extent by three-quarters or more of the videos were vocabulary (92.9%) and content-based instruction (75%). Over 40% of the videos had a limited presence of vocabulary and content-based instruction. A moderate presence for vocabulary and content-based instruction was evident in 17.9% and 14.3% of the videos respectively. Nearly a third (32.1%) extensively addressed vocabulary while 17.9% extensively addressed content-based instruction. Many strategies suggested in these videos were geared toward inputting and retaining new vocabulary in different content areas. For example, a few videos highlighted graphic organizers, a scaffolding tool primarily used to visually represent concepts behind one or more vocabulary words in various subjects such as science, math,

physical education, and more. Modeling the pronunciation of or putting students into groups to discuss and practice the use of a new vocabulary word were common. Using objects from real life was also encouraged by a few videos to provide students with visual aids and examples of new concepts and vocabulary.

Table 4.2. *Content Quality of TeacherTube Videos (N=28)*

Variable	Mean	SD	0 % Not present	1 % Limited presence	2 % Moderate presence	3 % Extensive presence
Vocabulary	1.75	1.00	7.1% (N=2)	42.9% (N=12)	17.9% (N=5)	32.1% (N=9)
Grouping	.71	.60	35.8% (N=10)	57.1% (N=16)	7.1% (N=2)	0% (N=0)
Metacognitive Strategies	.43	.79	71.4% (N=20)	17.9% (N=5)	7.1% (N=2)	3.6% (N=1)
Feedback	.43	.84	71.4% (N=20)	21.5% (N=6)	0% (N=0)	7.1% (N=2)
Scaffolding	1.14	1.01	28.6% (N=8)	42.8% (N=12)	14.3% (N=4)	14.3% (N=4)
Content-based Instruction	1.25	1.04	25% (N=7)	42.8% (N=12)	14.3% (N=4)	17.9% (N=5)
Cultivating Student Relationships	.46	.92	75% (N=21)	10.8% (N=3)	7.1% (N=2)	7.1% (N=2)
Overall Content Quality Rating	.88	.41				

Slightly more than half of the TeacherTube videos addressed scaffolding (71.4%) and grouping (64.2%). Over half of the TeacherTube videos had a limited presence of grouping (57.1%) while almost half of them did scaffolding (42.8%). Only 2 videos (7.1%) addressed grouping moderately while over a quarter (28.6%) addressed scaffolding moderately and extensively. Scaffolding strategies such as graphic organizers or learning tasks such as quick writes often reinforced the learning of a vocabulary word. Another scaffolding technique, teaching with "Realia" where instructors used real world objects to engage student senses, was used primarily to identify and understand concepts. Activities such as having students tackle

reading passages about natural environments in groups to learn new concepts fell into several categories of vocabulary, grouping, learning strategies, and content-based instruction.

Some areas were addressed at least in limited ways in a quarter or more of the videos. Metacognitive strategies and feedback received limited coverage in 28.6% of the videos, while cultivating student relationships was addressed in 25% of the videos. Videos that covered metacognitive strategies encouraged students to share in groups or independently the thinking process while learning new concepts. Students were prompted to reflect on prior knowledge on a topic or have "private think time" to figure out the answer to questions rather than being pressured to just blurt the answer out. Videos covering feedback emphasized the importance of having students practice the language in groups to get quick and direct feedback on their progress by peers. Furthermore, these videos encouraged teachers to be organized in delivering instruction so as to be available to students in modeling proper language performance quickly and directly. Videos discussing the importance of cultivating student relationships addressed how to be sensitive of students' needs, such as being careful not to embarrass them, working with them individually, and supporting them culturally.

The overall content quality mean rating was a .88 out of 3, suggesting overall low coverage of the different content quality indicators in TeacherTube videos. Overall in the TeacherTube videos the least covered topic was cultivating relationships with 75% not addressing this aspect. Metacognitive strategies and feedback were not addressed in 71.4% of the videos. The topic with the most coverage addressed moderately or extensively was vocabulary (50%), followed by content-based strategies (32.2%)

YouTube Content Quality Ratings

YouTube videos were also compared against the same rubric created from the LIEP report. Table 4.3 summarizes the extent that areas recommended in the LIEP report were evident, including the overall content quality mean rating. As can been seen in Table 4.3 and similar to TeacherTube videos, the areas where over a third of the videos extensively covered the topic were vocabulary and content-based teaching. Over 40% of the videos extensively addressed vocabulary (42.9%) and over one-third (39.3%) addressed content-based instruction. Almost a third (28.6%) of the videos extensively covered scaffolding.

Much like the TeacherTube videos, many of the videos gave teachers techniques and tips to support students' learning and retention of concepts and English vocabulary. Techniques included using comic strips to support student retention and understanding of grammar, using visuals wherever possible to reinforce concepts, using graphic organizers to learn science vocabulary, movement based activities to remember math concepts, drawing activities and note taking tasks, working in groups through jigsaw activities, and more easily covered vocabulary and content-area teaching. Many of these activities were exercises teachers were encouraged to use until students understand the concept. Then, these strategies can be applied to the learning of new concepts or vocabulary.

Table 4.3. *Content Quality of YouTube Videos (N=28)*

Variable	Mean	SD	0 % Not present	1 % Limited presence	2 % Moderate presence	3 % Extensive presence
Vocabulary	1.79	1.26	25.0% (N=7)	14.3% (N=4)	17.8% (N=5)	42.9% (N=12)
Grouping	.89	.69	28.6% (N=8)	53.6% (N=15)	17.8% (N=5)	0% (N=0)
Metacognitive Strategies	.46	.79	67.9% (N=19)	21.4% (N=6)	7.1% (N=2)	3.6% (N=1)
Feedback	.68	1.02	60.8% (N=17)	21.4% (N=6)	7.1% (N=2)	10.7% (N=3)
Scaffolding	1.57	1.14	21.4% (N=6)	28.6% (N=8)	21.4% (N=6)	28.6% (N=8)
Content-based Instruction	1.46	1.40	42.9% (N=12)	7.1% (N=2)	10.7% (N=3)	39.3% (N=11)
Cultivating Student Relationships	.64	1.13	71.5% (N=20)	7.1% (N=2)	7.1% (N=2)	14.3% (N=4)
Overall Content Quality Rating	1.07	.52				

Some areas were addressed at least in limited ways in a quarter or more of the videos. Grouping techniques received limited coverage in 53.6% of the videos, scaffolding had limited coverage in 28.6%, and metacognitive strategies and feedback each had limited coverage in 21.4% of the videos. When combining limited, moderate, and extensive coverage, at least 70%

of the videos addressed vocabulary, grouping, and scaffolding in one way or another. A little more than half covered content-area teaching, while less than half of the videos addressed metacognitive strategies, feedback, and cultivating student relationships. Videos covered strategies like SDAIE (specifically designed academic instruction in English) to create teacher prepared notes with visual aids in specific content-area lessons to cover vocabulary, scaffolding, and content-area teaching indicators. A few videos specifically explained how to teach content areas exclusively, such as science and math, which of course still covered vocabulary concepts and use of scaffolding techniques such as visuals. Many of these videos also encouraged teachers to put students into groups so they could share the workload and work with partners of varying skills to sharpen their own skills. The overall content quality mean rating is 1.07 out of 3, suggesting a relatively low coverage of content quality indicators overall by YouTube videos.

Consistent with the TeacherTube videos, the three areas with the highest percentage of YouTube videos not addressing a strategy at all were cultivating student relationships (71.5%), metacognitive strategies (67.9%), and feedback (60.8%). Also consistent with the TeacherTube ratings, the topics with the highest percentage of videos covering them moderately or extensively were vocabulary (60.7%) and content-based instruction (50%). However, unlike the TeacherTube videos where only 28.6% covered scaffolding moderately or extensively, 50% of YouTube videos covered scaffolding.

TeacherTube Compared to YouTube Content Ratings

Table 4.4 shows a comparison of content quality video coverage from TeacherTube to YouTube videos. The table shows the percentage of videos that moderately to extensively cover the content quality indicators.

In both TeacherTube and YouTube videos the area most likely to be addressed in the videos was vocabulary. In both TeacherTube and YouTube vocabulary was covered in 50% or more of the videos. Scaffolding and content-based instruction were covered in over a quarter of TeacherTube videos and half of YouTube videos. In both sets of videos the areas least likely to have been covered moderately or extensively were grouping, metacognitive strategies, cultivating student relationships, and feedback.

Table 4.4. *Comparison of TeacherTube and YouTube Most Content Coverage (N=56)*

	TeacherTube % with moderate to extensive coverage	YouTube % with moderate to extensive
Vocabulary	50.0%	60.7%
Grouping	7.1%	17.8%
Metacognitive Strategies	10.7%	10.7%
Feedback	7.1%	17.8%
Scaffolding	28.6%	50.0%
Content-based instruction	32.2%	50.0%
Cultivating student relationships	14.2%	21.4%

Table 4.5 shows a comparison between TeacherTube and YouTube videos in terms of the areas most likely to not be covered at all in the videos. The top three categories that had the least coverage were cultivating student relationships, metacognitive strategies, and feedback. While the percentage values were a little higher for TeacherTube than YouTube, the rank order were the same from both sites. The categories with lower percentages for no content coverage differed in rank order between YouTube and TeacherTube. For example, vocabulary was the most covered for TeacherTube, while scaffolding was so for YouTube. Vocabulary mean scores are higher for YouTube content coverage however, since there were more videos.

Table 4.5. *Comparison of TeacherTube and YouTube Least Content Coverage (N=56)*

	TeacherTube % with No coverage	YouTube % with No coverage
Vocabulary	7.1%	25.0%
Grouping	35.8%	28.6%
Feedback	71.4%	60.8%
Scaffolding	28.6%	21.4%
Metacognitive Strategies	71.4%	67.9%
Content-based instruction	25.0%	42.9%
Cultivating student relationships	75.0%	71.4%

Table 4.6 shows a comparison of the mean scores for each of the content aspects. As can be seen, there is consistency between TeacherTube and YouTube videos in terms of the three strategies with the highest mean scores, indicating they were more likely to have been covered in some way in more videos. These three areas were vocabulary (1.75 and 1.79 respectively), scaffolding (1.14 and 1.57 respectively) and content-based instruction (1.25 and 1.46 respectively). No others had means of over 1 except for YouTube's overall content quality rating at 1.07 to TeacherTube's .88.

Table 4.6. *Comparison of Mean Content Ratings (N=56)*

	TeacherTube Mean Scores	YouTube Mean Scores
Vocabulary	1.75	1.79
Group	.71	.89
Metacognitive Strategies	.43	.46
Feedback	.43	.68
Scaffolding	1.14	1.57
Content-based Instruction	1.25	1.46
Cultivating Student Relationships	.46	.64
Overall Content Quality Rating	.88	1.07

Instructional Design Quality Ratings

The study's second research question asked to what extent did selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms exhibit high quality ratings using the Morain and Swarts (2012) instructional video assessment rubric? Morain and Swarts' (2012) framework for assessing instructional online videos was used to rate TeacherTube and YouTube videos. The framework is made up of three categories each with three objectives. The rubric has a minimum possible score of one out of three for each of the nine total objectives.

The first general category measures the physical design of the instructional video and considers the video's timing, viewing quality, and accessibility. To receive a score of three, the video's timing must be at a conversational pace. A video with low timing score would have consistently too fast or too slow timing requiring frequent pausing or fast forwarding. A high

viewing quality score is given to high definition videos that display relevant details. A video with low viewing quality would be illegible and no high definition. The audio scores are based on whether the video made good use of voice-overs and the clarity of the sound itself.

The second category of the framework is the cognitive design and measures accuracy, organization, and pertinence of the videos. A video with low accuracy will feature a narrator that has many errors in his or her instruction while a highly accurate video will have none or immediately correct the few that exist. A poorly organized video will not announce the purpose of the video while a well-organized video has a clear structure and goal. The pertinence score rests on a video's ability to explain instructional steps or components with extra details that enhance understanding.

The affective aspect is the final category of assessing the instructional video design, related to the confidence, self-efficacy, and engagement of the video delivery. A video with a high confidence score is well rehearsed and has a narrator who introduces the video and shares the credentials behind the instruction. The self-efficacy score is determined by the narrator's ability to inspire confidence, show experience, and stay on task while delivering instruction. A video's engagement score reflects the narrator's skill in being conversational, enthusiastic, and setting and attaining goals throughout.

TeacherTube Design Quality Ratings

TeacherTube videos were rated using the framework for assessing instructional video in each of the three categories and their subcategories. Table 4.7 summarizes the instructional design scores of TeacherTube videos showing that there are several areas where over half of the videos were of high quality. All but one video (96.4%) was of high quality in accuracy. Three quarters of all the videos had high quality in pertinence where nearly three quarters of the videos had high quality ratings for audio. A little over half of the videos had high quality in timing.

While many videos were of high quality in four areas, many videos were of moderate design quality in all other areas. Three quarters of the videos had moderate quality in confidence while close to three quarters of the videos were of moderate quality for viewing and self-efficacy (67.9%). 60% of the videos were of moderate quality in organization. Half of the videos were of moderate quality for engagement.

Table 4.7. *Instructional Design Quality of TeacherTube Videos (N=28)*

Variable	Mean	SD	1 % Low Quality	2 % Moderate Quality	3 % High Quality
PHYSICAL DESIGN	2.30	.41	14.3% (N=4)	78.6% (N=22)	7.1% (N=2)
Audio	2.64	.46	3.6% (N=1)	28.6% (N=8)	67.8% (N=19)
Viewability	1.82	.55	25% (N=7)	67.9% (N=19)	7.1% (N=2)
Timing	2.43	.74	14.3% (N=4)	28.6% (N=8)	57.1% (N=16)
COGNITIVE DESIGN	2.62	.35	3.6% (N=1)	71.4% (N=20)	25% (N=7)
Accuracy	2.93	.38	3.6% (N=1)	0% (N=0)	96.4% (N=27)
Organization	2.18	.61	10.7% (N=3)	60.7% (N=17)	28.6% (N=8)
Pertinence	2.75	.44	0% (N=0)	25% (N=22)	75% (N=21)
AFFECTIVE DESIGN	2.12	.40	17.8% (N=5)	78.6% (N=22)	3.6% (N=1)
Confidence	1.89	.5	17.9% (N=5)	75% (N=21)	7.1% (N=2)
Self-Efficacy	2.18	.55	7.1% (N=2)	67.9% (N=19)	25% (N=7)
Engagement	2.29	.66	10.7% (N=3)	50% (N=14)	39.3% (N=11)
Overall Design Quality Rating	2.52	.28			

Most of the videos rated at least a moderate quality rating, with only a handful of videos rating poor quality for any one variable. One quarter of the videos had poor quality ratings for viewing, 17.9% had poor confidence and 14.3% had low timing ratings. Of the three main categories (physical, cognitive, and affective), the cognitive aspect had a mean rating of 2.62 while physical design quality had a mean of 2.30. The lowest mean rating was for the affective aspect at 2.12. The overall design mean score is a 2.52 out of 3, suggesting overall good video design quality. Cognitive design had the highest amount of videos (96.4%) receiving moderate

to high quality ratings followed by physical design with 85.7% videos receiving moderate to high ratings. For the affective design, 82.2% had moderate to high quality ratings.

YouTube Design Quality Ratings

Table 4.8 summarizes the scores of YouTube videos compared against the Morain and Swarts (2012) framework for assessing instructional video.

Table 4.8. *Instructional Design Quality of YouTube Videos (N=28)*

Variable	Mean	SD	1 % Low Quality	2 % Moderate Quality	3 % High Quality
PHYSICAL DESIGN	2.67	.51	14.3% (N=4)	25% (N=7)	60.7% (N=17)
Audio	2.68	.72	14.3% (N=4)	3.6% (N=1)	82.1% (N=23)
Viewability	2.82	.48	3.6% (N=1)	10.7% (N=3)	85.7% (N=24)
Timing	2.50	.84	21.4% (N=6)	7.1% (N=2)	71.5% (N=20)
COGNITIVE DESIGN	2.82	.40	3.6% (N=1)	17.8% (N=5)	78.6% (N=22)
Accuracy	2.93	.38	3.6% (N=1)	0% (N=0)	96.4% (N=27)
Organization	2.64	.73	14.3% (N=4)	7.1% (N=2)	78.6% (N=22)
Pertinence	2.89	.42	3.6% (N=1)	3.6% (N=1)	92.8% (N=26)
AFFECTIVE DESIGN	2.43	.46	10.7% (N=3)	75% (N=21)	14.3% (N=4)
Confidence	2.07	.47	7.1% (N=2)	78.6% (N=22)	14.3% (N=4)
Self-Efficacy	2.43	.69	10.7% (N=3)	35.7% (N=10)	53.6% (N=15)
Engagement	2.79	.50	3.6% (N=1)	14.3% (N=4)	82.1% (N=23)
Overall Design Quality Rating	2.78	.33			

Many of the videos had high quality design ratings. At least 70% of the YouTube videos were of high quality design in all categories except for two, confidence (14.3%) and self-efficacy

(53.6%). Similar to TeacherTube, nearly all the videos were of high quality in accuracy (96.4%). However, YouTube also had a second category with such high ratings, pertinence (92.9%).

Slightly less but still most of the videos yielded high scores in engagement and audio (both at 82.1%), and viewability (85.7%). Almost 80% of the videos were highly organized and more than 70% of them well paced. A little over three quarters of video had a high quality rating in organization (78.6%), while almost that amount had high quality in timing (71.5%).

Very few categories had a sizeable amount of low quality video. The two categories with fewer high quality videos rated well in moderate quality. Confidence had over three quarters with moderate quality (78.6%). Nearly all videos had moderate to high ratings in self-efficacy (89.3%). Very few design areas had even a handful of poor quality video. Over 20% had poor ratings for timing and 14.3% for audio and organization.

The overall design mean score was 2.78 out of 3, suggesting very good video design quality. Looking at the three primary design categories (physical, cognitive, and affective), cognitive design had the highest mean score at 2.82 followed by physical (2.67) and affective design (2.43). Overall, cognitive design had the highest percentage of videos rated as moderate to high quality (96.4%), followed by affective (89.3%) and physical design (85.7%), nearly identical to the TeacherTube findings.

TeacherTube Compared to YouTube Design Ratings

Table 4.9 compares TeacherTube and YouTube design ratings by showing the percentage of videos that have moderate to high ratings for design quality indicators. As shown, TeacherTube and YouTube videos rank exactly the same order two of the three subcategories of physical (85.7% each) and cognitive (96.4% each). The affective areas ranked lowest at 82.2% for TeacherTube and second 89.3% for YouTube. In fact, all of the areas of design quality rank highly for both TeacherTube and YouTube videos. Only two items had less than 80% of the video as scoring moderate to high quality: viewability in the TeacherTube videos (75%) and timing for the YouTube videos (78.5%).

The highest scoring subcategory is that of the cognitive design with 96.4%, consisting of three subscales, accuracy, organization, and pertinence. In the cognitive design category, TeacherTube and YouTube videos received the similar scores, with accuracy at 96.4% each and TeacherTube slightly outscoring YouTube in organization and pertinence.

TeacherTube and YouTube videos received relatively different scores in the affective and physical categories. The second highest primary design category for YouTube videos was the affective at 89.3%, while for TeacherTube it was the physical at 85.7%. The affective area covers confidence, self-efficacy, and engagement. While YouTube videos outranked TeacherTube in confidence and engagement, TeacherTube scored slightly better in self-efficacy. For the physical area, TeacherTube had more video with moderate to extensive quality in audio and timing, while YouTube had more video with better viewability.

Table 4.9. *Comparison of TeacherTube and YouTube Design Quality Ratings (N=56)*

	TeacherTube % with moderate to extensive coverage	YouTube % with moderate to extensive
PHYSICAL	85.7% (N=24)	85.7% (N=24)
Audio	96.4% (N=27)	85.7% (N=24)
Viewability	75% (N=21)	96.4% (N=27)
Timing	85.7% (N=24)	78.5% (N=22)
COGNITIVE	96.4% (N=27)	96.4% (N=27)
Accuracy	96.4% (N=27)	96.4% (N=27)
Organization	89.3% (N=25)	85.7% (N=24)
Pertinence	100% (N=28)	96.4% (N=27)
AFFECTIVE	82.2% (N=23)	89.3% (N=25)
Confidence	82.1% (N=23)	92.9% (N=26)
Self-efficacy	92.9% (N=26)	89.3% (N=25)
Engagement	89.3% (N=25)	96.4% (N=27)

TeacherTube and YouTube outscored each other in moderate to high quality design for a mostly even amount of indicators. TeacherTube had more video with moderate to high quality

design in the areas of audio, timing, organization, pertinence, and self-efficacy. YouTube had moderate to high quality design in the areas of viewability, confidence, engagement, and the affective. However, as shown in Table 4.10, YouTube design means outscored those of TeacherTube in every area except one.

Table 4.10 shows a comparison of the mean scores for each of the design aspects. As can be seen, there is consistency between TeacherTube and YouTube videos in all of the design aspects, indicating that most of the videos were similar in their video composition. These areas were accuracy (each 2.93), audio (2.64 and 2.68 respectively), timing (2.43 and 2.50 respectively), and pertinence (2.75 and 2.89 respectively.

Table 4.10. *Comparison of Mean Design Ratings (N=56)*

	TeacherTube Mean Scores	**YouTube Mean Scores**
PHYSICAL	2.30	2.67
Audio	2.64	2.68
Viewability	1.82	2.82
Timing	2.43	2.50
COGNITIVE	2.62	2.82
Accuracy	2.93	2.93
Organization	2.18	2.64
Pertinence	2.75	2.89
AFFECTIVE	2.12	2.43
Confidence	1.89	2.07
Self-efficacy	2.18	2.43
Engagement	2.29	2.79
Overall Design Quality Rating	2.52	2.78

YouTube videos received higher mean scores in all areas, except for accuracy, where the mean was the same for both video sets. Although YouTube videos did outscore TeacherTube means in almost every category, the difference between TeacherTube and YouTube means range from 0.04 to 1.

User Ratings

Determining how teacher learners rated selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms was the topic of the third research question of this study. The number of views, likes, dislikes, and positive or negative comments a video had made up its user rating. The data were recorded for each video and tabulated to determine how users rated videos. During analysis it came to light that while number of views was available for all TeacherTube videos, only two TeacherTube videos received one like each and another two videos received an overall rating of ten. Because there was such limited data available regarding number of likes and overall ratings, it was only possible to use the number of views data as a substitute user rating with the assumption that the more a video is viewed, the more positively users perceive it to be. This assumption is backed by the literature. Lin, Michko, and Bonk (2009) conducted a survey of 1008 respondents from different countries, over half of which were from America, representing all age and education groups. The survey data reported that a high percentage of YouTube users watch and share with friends which suggests that the "number of views directly influences a video's ranking" (Lin, Michko, & Bonk, 2009). Furthermore, three in four viewers receive links to videos they watch from others and one in five users take time to rate or comment after watching (Madden, 2007). For TeacherTube therefore, user ratings for videos are solely calculated by the frequency of views each received.

TeacherTube and YouTube Views

Table 4.11 outlines the number of views received by the TeacherTube and YouTube videos. Because of the large variation in numbers of views, they were categorized into six groups. The number of views is presented as values with various ranges.

Table 4.11 shows mostly similarities in the number of views between TeacherTube and YouTube videos, however there are a couple areas showing contrast. More than half of the YouTube videos had less than 1000 views while a little more than a quarter of TeacherTube videos did. In both sets of data, over 60% of the videos had 3000 or fewer views (TeacherTube 60.7% and YouTube 64.3%). While 28.6% of TeacherTube videos had 2001 to 4000 views, only 10.7% of YouTube videos did. A little less than a quarter (21.4%) of the YouTube videos had

more than 5000 views while only one TeacherTube video did. There were only a handful of YouTube views between 1000 and 5000 while about two-thirds of TeacherTube videos had that number of views.

Table 4.11. *TeacherTube (N=28) and YouTube (N=28) Views*

	TeacherTube	YouTube
0-1000	28.6% (N=8)	57.2% (N=16)
1001-2000	32.1% (N=9)	7.1% (N=2)
2001-3000	14.3% (N=4)	7.1% (N=2)
3001-4000	14.3% (N=4)	3.6% (N=1)
4001-5000	7.1% (N=2)	3.6% (N=1)
5001+	3.6% (N=1)	21.4% (N=6)

TeacherTube and YouTube User Likes

Table 4.12 displays the number of likes received by the TeacherTube and YouTube videos. The number of likes is presented as values with various ranges.

Table 4.12. *TeacherTube (N=28) and YouTube Likes (N=28)*

	TeacherTube	YouTube
0	92.9% (N=26)	35.7% (N=10)
1-10	7.1% (N=2)	50% (N=14)
11-20	0% (N=0)	3.6% (N=1)
21-30	0% (N=0)	3.6% (N=1)
31+	0% (N=0)	7.1% (N=2)

TeacherTube videos received no dislikes and only four YouTube videos received at the most two dislikes. Because the quantity of dislikes was so low, they were omitted from the frequency data.

One of the limitations of this table as you can see is that there are few to no likes for TeacherTube videos. The YouTube videos had more activity in receiving likes, but even then, just over a third (35.7%) of YouTube videos had no likes. Half of YouTube videos received at least one to ten likes. Only a handful of the YouTube videos received more than ten likes.

Qualitative Comments on Videos

There were no comments made for any TeacherTube videos, while YouTube videos received several. Nine YouTube videos received a total of 18 comments, which were all positive and written by different users. The number of comments any one video received ranged from one to five. The comments fit into two thematic categories: comments expressing thanks and validating comments about the information shown in the videos. Table 4.13 shows a few of the comments made for YouTube videos.

Table 4.13. *Qualitative Comments on YouTube Videos (N=28)*

Thankful	Validation
Thank you for sharing!	The SDAIE strategy of jigsaw is a great SDAIE strategy for not only ELL students but for the whole class. In this strategy students are given the chance to participate in the class as a whole and then work within groups to discover information together and individually. This is a great way for ELL students to socialize with others and if having a little difficulty with the activity, get help from their peers. This is a great strategy to use for ELL students, not matter what their level is!
Thanks teacher, I really learnt a great deal from your simple, accurate explanation on writing. I am an English teaching China. I've been teaching this language for over 23 years now..But...I still learn it like it used to do in my school age, ages ago! god bless!	The jigsaw is not only a great SDAIE strategy, but a great cooperative learning activity as well! Jigsaw is great to expand an ELL's social skills because they have to retrieve information from their peers, but it also gives the student's a sense of responsibility for their 'home team." Not to mention, it also saves a lot of time! This SDAIE strategy is great for ELL students from beginning to end! Great job, Nice!

Table 4.13. (Continued) *Qualitative Comments on YouTube Videos (N=28)*

Thank you! I just finished my 4th TPA!! Good luck!!	Like that you included the level of ELL acquisition to use this strategy with. Also, I agree that you need to use a variety of tools to help enhance student comprehension such as visual representation and visuals. Thanks for posting this information!
Thank you so much for this video! I'm working on my TPA right now and this video had a lot of great information!	Having the kids clap and stomp their feet during a lesson must help to keep them focused on the topic that is being presented. It's good to know it's good for them also. They looked like they were having fun, too.
	I like the math lesson because it is fun and ELL students will have a visual model. Even if they do not understand what is being said, they will be able to understand by the visual model.
	This is a great way to use TPR. Thinking about using it for my English classes. I have seen it down with figuring out angles in Math, but determining hair color and something common that everyone can be a part of is great. Plus, this is instant feedback on if they understand, are participating, and have questions.
	This strategy seems like an effective strategy. I am curious and excited to use this strategy in my own classes. Students can learn a lot from visualizing the information. Graphs are an effective way to teach material in a way that make it easy for students to comprehend.
	The strategy of Total Physical Response for math is an interesting and effective sounding strategy. Math, after all, can be extremely difficult for a student to understand, because it is a language of its own. However, using rope and string to teach graphing, the students will be able to create a better understanding of the academic language and the procedures of mathematics.

Table 4.13. (Continued) *Qualitative Comments on YouTube Videos (N=28)*

	Great video! I love your usage of visual aids with all the pictures in your video. Your video has an excellent SDAIE strategy that I can use in my classroom. The many examples provided with the different subjects show that realia can be done in any subject of teaching. The idea of the 5 senses (see, touch, hear, smell, and taste) for realia is a great idea in teaching new vocabulary words, especially to ELL students.
	This is a great video for teachers. You gave great support as to why the four square strategy is accessible and appropriate for English Language Learners. The example you have was very helpful as to how to create a four square card! Thank you for contributing the strategy.
	Hey! I now im not supposed to say great video, but i really think it was. You introduced the topic and connected me with the subject really well! I remember growing up and using flash cards a lot to memorize words or just seeing a word and its definition on paper. I love the idea of realia because it brings the words to life and creates meaning and a genuine connection/understanding. Thanks for such a great video!! :)

Thirteen comments were validating comments with users affirming the effectiveness of the shared strategy or giving support to the quality of the video itself. A handful of comments expressed gratitude for the video posting.

Relationship Between User Ratings and Quality Ratings

The final research question asked about the relationship between the video user ratings (UR) and the video quality ratings (CQ and IDQ) as a measure of the algorithmic aspect for self-directed learners. In other words, do teachers self-select more frequently to view videos that are

of higher content and/or design quality? Correlations were conducted between user ratings and content and design quality ratings for the TeacherTube and YouTube videos. The tables are organized by content ratings and design ratings for each type of video. Lastly, correlations between the two types of quality ratings are displayed. Correlation data were interpreted using the following criteria: .00 - .30 as a small or weak correlation, .31 - 49 as a moderate correlation, .50 - .69 as a strong correlation and .70 – 1.0 as a very strong correlation (Cohen, 1988).

Relationship between User Ratings and Content Quality Ratings

Each component of content quality ratings was correlated with the user ratings for each type of video, TeacherTube and YouTube. The user ratings were measured by the total views each video received. Significance for each correlation statistic less than 0.05 is marked. Table 4.14 shows the correlation values for TeacherTube and YouTube videos between user views and content quality ratings.

Table 4.14. *Correlation values between User Views and Content Quality Ratings of TeacherTube and YouTube Videos (N=56)*

	TeacherTube Video *r*	YouTube Video *r*
Vocabulary	.00	-.35
Grouping	-.03	.02
Teaching Strategies	.00	-.11
Feedback	.05	-.01
Scaffolding	-.28	-.36
Content-based Instruction	.08	-.14
Cultivating Student Relationships	-.32	.09
Overall Content Quality Rating	-.17	-.28

*p < .05

There are no significant findings in the correlation data shown between user ratings and content quality ratings of TeacherTube videos. The strongest correlation is a negative relationship between the scaffolding indicator and the total number of YouTube views. Still this is a moderate correlation at r = -.36. More than half of the content quality indicators have a weak

relationship with the user ratings. The next strongest correlation is in regards to YouTube video; a negative relationship with vocabulary at r = -.35.

Table 4.15 explores the relationship between likes and dislikes and content quality for YouTube videos. There were insufficient numbers of likes and dislikes in the TeacherTube data to warrant this analysis.

Table 4.15. *Relationship between User Likes and Dislikes and Content Quality Ratings of YouTube Videos (N=56)*

	Likes *r*	Dislikes *r*
Vocabulary	-.28	-.19
Grouping	.02	.06
Teaching Strategies	.00	-.06
Feedback	-.11	.00
Scaffolding	-.40*	-.25
Content-based Instruction	-.14	.01
Cultivating Student Relationships	.10	-.05
Overall Content Quality Rating	-.28	-.16

*p < .05

There is but one significant correlation between scaffolding and the number of likes of YouTube videos (r = -.40). This is a moderately negative relationship between YouTube likes and videos that discuss scaffolding as a useful technique for instructing English language learners.

The next strongest correlation data is a negative relationship between videos containing vocabulary strategies, the overall content quality rating, and the number of YouTube likes. They are both weak relationships at r = -.28 and not statistically significant. Overall, most of the content quality indicators were weakly related to the number of views, likes, or dislikes.

Relationship between User Ratings and Instructional Design Quality Ratings

The following table shows correlation values between user views and design quality ratings of TeacherTube and YouTube videos. As shown (Table 4.16), there are no significant findings in the correlations. The individual design quality indicators were not included because there also were no significant findings in the correlations.

Table 4.16. *Correlation between User Views and Instructional Design Quality Ratings of TeacherTube and YouTube Videos (N=56)*

	TeacherTube *r*	YouTube *r*
Physical	-.13	.28
Cognitive	.10	.20
Affective	.00	.33
Overall Design Quality	.02	.30

*p < .05

The strongest correlations are the affective design aspect (r = .33) and overall design quality (r = .30) with YouTube video views. Though the highest, they are moderate correlations and not statistically significant. Generally, all of the design quality indicators have a weak relationship with user views in TeacherTube and YouTube videos.

Table 4.17 shows there are no significant findings in the correlation data shown between likes and dislikes ratings and design quality ratings of YouTube videos. Furthermore, the individual design quality indicators were not included because there also were no significant findings in the correlations.

Table 4.17. *Relationship between User Likes and Dislikes and Instructional Design Quality Ratings of YouTube Videos (N=28)*

	Likes *r*	Dislikes *r*
Physical	.30	.17
Cognitive	.23	.17
Affective	.30	.30
Overall Design Quality Rating	.32	.21

*p < .05

The strongest correlation is that between the overall design quality and the number of likes videos received at r = .32. There are three coefficients tied as the second strongest correlation at r = .30. They are: physical area of design and the number of likes, and the affective area of design and the number of likes and dislikes. The third strongest correlations are between the cognitive design and number of likes (r = .23), and overall design rating and number of dislikes (r = .21), all showing moderate to weak relationships.

Additional Analyses

Relationship Between Content Quality and Design Quality Ratings

The following table shows the relationship between content and design quality ratings. Table 4.18 shows the relationship between content and design quality ratings of the TeacherTube videos analyzed. Table 4.19 shows the same data for the YouTube videos.

Table 4.18. *Correlation between Content Quality and Design Quality Ratings of TeacherTube Videos (N=28)*

	Physical *r*	Cognitive *r*	Affective *r*	Overall Design Rating *r*
Vocabulary	.28	.25	-.02	.17
Grouping	.36	.11	.25	.28
Metacognitive Strategies	.05	.26	-.09	.12
Feedback	.08	.16	-.01	.20
Scaffolding	.19	.41*	.39*	.43*
Content-based Instruction	.14	.20	.16	.14
Cultivating Student Relationships	.31	.30	.42*	.44*
Overall Content Quality Rating	.43*	.55*	.32	.56*

*p < .05

For the TeacherTube videos, a few statistically significant moderate and strong positive correlations were found. Correlations exist between scaffolding and cognitive design (r = .41), affective design (r = .39), and overall design quality (r = .43) indicating a correlation between scaffolding and design aspects of TeacherTube videos. Hence, between 17% and 18% of the variation in ratings on one quality aspect (e.g. scaffolding) can be accounted for by variance in another quality aspect (e.g. cognitive, affective or overall design).

Cultivating student relationships also has a moderately positive correlation with the affective area of design (r = .42) and the overall design rating (r = .44). Also, between 17% and 19% of the variance in the affective area of design can be accounted for by the variance in affective area of design and cultivating student relationships.

Table 4.19. *Relationship between Content Quality and Design Quality of YouTube Videos*

	Physical *r*	Cognitive *r*	Affective *r*	Overall Design Quality *r*
Vocabulary	-.13	.14	-.18	.02
Grouping	-.25	.11	-.08	-.07
Metacognitive Strategies	.00	.19	-.23	.10
Feedback	-.12	-.06	.22	-.02
Scaffolding	-.30	.15	.06	.03
Content-based Instruction	.19	.29	.22	.33
Cultivating Student Relationships	.26	.04	.38*	.19
Overall Content Quality Rating	-.07	.27	.15	.21

*p < .05

Finally, overall content quality ratings were correlated with the physical (r = .43), cognitive (r = .55), and overall design quality scores (r = .56). While the correlation between the content quality ratings and physical area is moderate, the cognitive area and overall design rating correlations are strong. This indicates that 18% of the variance in overall content quality can be predicted by the physical aspect, while nearly a third (30%) by the cognitive, and slightly more (31%) by the overall design rating.

There was only one significant correlation between content and design quality ratings among the YouTube videos. This was also the highest correlation (r = .38) reflecting a relationship between cultivating student relationships and the affective area of design. While this is a moderately strong relationship, 14% of the variation in ratings in content-based instruction could be explained by design quality.

Relationship Between Content Quality, Design Quality, and User Ratings

There were few significant relationships between the content and design quality indicators for each set of TeacherTube and YouTube videos. This could be attributed to the small sample size (n = 28 for each set). Therefore, correlation tests were conducted using all 56 videos

combined (Table 4.20). YouTube likes and dislikes were not included in the correlation table because they are only relevant to YouTube videos. The numbers listed from 1 to 13 horizontally correspond to the numbers listed vertically in the first column listing the indicators.

There are several correlations discovered in Tables 4.19 and 4.20 that surface still in analyzing all 56 videos. Scaffolding is significantly and positively correlated with the cognitive design aspect ($r = .30$) and the overall design rating ($r = .26$). Cultivating student relationships is still significantly correlated with the affective area of design ($r = .40$) and overall design quality ($r = .30$). Lastly, the overall content quality rating is still correlated significantly with the cognitive area of design ($r = .41$) and the overall design quality rating ($r = .39$). All of the correlation strengths declined when analyzing TeacherTube and YouTube videos, but still showed moderately strong correlations.

Although many of these correlations were weakened in strength as a result of combining TeacherTube and YouTube videos for correlation analysis, more than a handful of new correlations surfaced. The 56 videos yielded significant correlations in content quality indicators of vocabulary, content-based instruction, and cultivating student relationships.

In regards to total views, two new correlations surfaced. As indicated in Table 4.15, there is still a correlation between total views and scaffolding, however weaker at $r = -.28$. Vocabulary is also negatively correlated with total views in a weak relationship ($r = -.26$). The affective area of design is weakly but positively correlated with total views at $r = .26$.

Two new correlations surfaced for content-based instruction and one for cultivating student relationships. Content-based teaching was weakly correlated with the cognitive aspect and overall design quality both at $r = .27$. This suggests that the variation in ratings of content-based instruction can be accounted for by cognitive and overall design quality by 7%. This is also similar of the relationship between cultivating student relationships and the physical aspect of video design ($r = .29$).

Table 4.20. *Relationship between Content Quality, Instructional Design Quality, & User Ratings of TeacherTube and YouTube videos*

		2	3	4	5	6	7	8	9	10	11	12	13
1. Vocab	-												
2. Group	.21	-											
3. Meta. Strat.	.14	.07	-										
4. Fdbk	-.05	.31*	-.02	-									
5. Scaff.	.20	.31*	.32*	.20	-								
6. CBI	.26*	.09	-.07	.00	.16	-							
7.Student Rel.	-.17	.14	-.13	.28*	.16	-.16	-						
8. Phys. Design	.03	.06	.03	.02	-.01	.19	.29*	-					
9. Cog. Design	.18	.14	.22	.07	.30*	.27*	.17	.19	-				
10. Aff. Design	-.09	.10	-.15	.16	.25	.21	.40*	.44*	.58*	-			
11. CQ Rating	.51*	.55*	.33*	.47*	.70*	.46*	.32*	.19	.41*	.29*	-		
12. DQ Rating	.08	.13	.11	.12	.26*	.27*	.30*	.64*	.78*	.80*	.39*	-	
13. Total Views	-.26*	.03	-.07	.01	-.28*	-.08	.02	.21	.18	.26*	-.21	.25	-

*p < .05

In addition to its correlation with total views, the affective area of design showed one more significant correlations. The affective area of design is weakly correlated with overall

content quality rating at r = .29. Therefore, 8% of the variation of affective video design can be attributed to its overall content quality.

Mean comparison of Quality ratings & User views between TeacherTube & YouTube

Table 4.21 shows a T-test comparison of TeacherTube and YouTube videos on content quality indicators, instructional design quality indicators and the number of views.

Table 4.21. *T-test comparison of TeacherTube (N=28) & YouTube (N=28) videos on Content Quality, Instructional Design Quality, and User Views*

	TeacherTube		YouTube		T-test
	M	SD	M	SD	
Vocabulary	1.75	1.00	1.79	1.26	Ns
Grouping	.71	.60	.89	.69	Ns
Metacognitive Strategies	.43	.79	.46	.79	Ns
Feedback	.43	.84	.68	1.02	Ns
Scaffolding	1.14	1.01	1.57	1.14	Ns
Content-based Instruction	1.25	1.04	1.46	1.40	.00*
Cultivating Student Relationships	.46	.92	.64	1.13	Ns
Physical aspect of Design	2.30	.41	2.67	.51	.00*
Cognitive aspect of Design	2.62	.35	2.82	.40	.05*
Affective aspect of Design	2.12	.40	2.43	.46	.01*
Overall Content Quality Rating	.88	.41	1.07	.52	Ns
Overall Design Quality Rating	2.52	.28	2.78	.33	.00*
Total Views	2000	1390	2810	5000	.01*

*p < .05

In comparing the TeacherTube and YouTube means, there were several areas of statistically significant difference. Content-based instruction (1.25 vs. 1.46), physical design

(2.30 vs. 2.67), cognitive design (2.62 vs. 2.82), affective design (2.12 vs.2.43), overall design quality (2.52 vs. 2.78), and total views (2000 vs. 2810) all showed statistically significant differences between TeacherTube and YouTube means. In each of these categories, YouTube videos outperformed TeacherTube videos. All the other indicators showed no significant differences between TeacherTube and YouTube videos.

Correlation between User views and Years ago Uploaded

A correlation test was conducted to see if there was a significant relationship between the number of views and the publish date of each video. Table 4.21 shows the correlation between views and years ago a video was published for TeacherTube videos, YouTube videos, and both TeacherTube and YouTube videos.

Table 4.22. *Relationship between views and video upload date of TeacherTube (N=28), YouTube (N=28), and combined (N=56) videos*

TeacherTube	YouTube	Combined
r	*r*	*R*
.23	.40*	.28*

*p < .05

There are two significant correlations between the number of views a video had and its upload date for YouTube videos (r = .40) and the combined TeacherTube and YouTube videos (r = .28). The correlation between number of views and upload date is moderately strong and the correlation of combined videos (N = 56) is weak. This indicates that 16% of the variance in YouTube views can be predicted by its upload date, while 7% of the variance in both TeacherTube and YouTube video views can be predicted by its upload date.

Summary

Overall, TeacherTube and YouTube videos exhibited moderate to high design quality and varied coverage of content quality indicators. Vocabulary was moderately to extensively present in both TeacherTube and YouTube videos at 50% and 60.7%. The next highest represented content quality indicators were scaffolding (28.6%) and content-based instruction (32.2%) for TeacherTube videos and both at 50% for YouTube. Most if not all TeacherTube and YouTube videos had moderate to extensive ratings on different design quality indicators. All of the TeacherTube videos had moderate to extensive ratings in pertinence. All but one of the

TeacherTube and YouTube videos had moderate to extensive ratings in accuracy. More YouTube videos had moderate to extensive quality in viewability (96.4%), confidence (92.9%), and engagement (96.4%) than TeacherTube (75%, 82.1%, and 89.3% respectively). While more TeacherTube videos had moderate to extensive design quality than YouTube except in the areas of viewability, confidence, and engagement, YouTube mean scores were higher than TeacherTube in all but one design indicators, of which was a tied accuracy score of 2.93.

Significant correlations between user ratings and video quality ratings emerged between TeacherTube and design quality indicators, and more so when combining all 56 TeacherTube and YouTube videos. There is a strong correlation between overall content and design quality ratings ($r = .56$) in TeacherTube videos. The same can be said for content quality and the cognitive aspect of design ($r = .55$). Correlating TeacherTube and YouTube videos combined with the content quality, design quality, and user ratings reveal moderately weak relationships between several more design and content quality indicators. Still, a moderate correlation exists between overall content and design quality ($r= .39$) and a weak correlation exists between YouTube likes and the affective design ($r = .26$).

The correlations between the number of views a video had and its upload date for YouTube videos was moderately strong ($r = .40$) and the combined TeacherTube and YouTube videos weak ($r = .28$). Still, 16% of the variance in YouTube views can be predicted by its upload date, while 7% of the variance in both TeacherTube and YouTube video views can be predicted by its upload date.

CHAPTER 5. DISCUSSION AND RECOMMENDATIONS

TeacherTube and YouTube videos were analyzed for content quality and design quality to identify correlations, if any, between quality and user ratings of videos providing instructional strategies for English language learner (ELL) teachers. The research questions of this study were:
1. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms align with ELL strategies described in the United States LIEP report (2012) (Content Quality of Videos - CQ)?
2. To what extent do selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms exhibit high quality ratings using the Morain and Swarts (2012) instructional video assessment rubric (Instructional Design Quality - IDQ)?
3. How do self-directed teacher learners rate selected TeacherTube and YouTube videos regarding English language instruction for K-12 classrooms (User Ratings – UR)?
4. What is the relationship between the video user ratings (UR) and the video quality ratings (CQ and IDQ) as a measure of the algorithmic aspect for self-directed learners)?

RQ1: Content Quality

TeacherTube and YouTube video content aligned somewhat with ELL strategies recommended in the LIEP report. According to the LIEP report, there are differing aspects of ELL instruction that work together for effective learning. The foremost important aspect of ELL instruction is second language acquisition, such as teaching vocabulary, giving students opportunities to practice the language in groups, and giving students learning strategies for them to monitor and develop their skills independently (U.S Department of Education, 2012). Identifying one particular technique as the best ELL instructional strategy is the antithesis to effective English language teaching. Rather, being aware of second language acquisition theory and processes and using a variety of strategies is the best way to support ELLs academically. The fact that there was a presence of each content quality indicator in the TeacherTube and YouTube videos reflects well the principle that multiple accommodations are needed. However, although the videos tended to incorporate multiple strategies, the different strategies were not

equally covered across the videos. For example, there was much emphasis on vocabulary and little emphasis on grouping and feedback. The emphasis on vocabulary may be understandable since the LIEP report (U.S. Department of Education, 2012) indicates that vocabulary development is the basis for second language learning.

There are several aspects of the content quality findings that were expected according to the literature. Prioritizing the concepts of second language acquisition is the most important first step. That vocabulary had high presence at over 90% for TeacherTube videos and 75% in YouTube videos reflects the alignment of content in TeacherTube and YouTube videos (U.S Department of Education, 2012). Scaffolding was also highly represented in both TeacherTube (71.4%) and YouTube (78.6%) videos. This supports the LIEP report statement that scaffolding is the third important step in ELL instruction (U.S Department of Education, 2012). Content-based instruction, the fourth important aspect of ELL instructional practices according to the LIEP report, was the third most present strategy for TeacherTube videos (71.4%) and the fourth most present for YouTube videos (U.S Department of Education, 2012).

A few findings show that TeacherTube and YouTube videos do not align with the literature regarding ELL instruction and content quality. Feedback, being the second most important step in effective ELL instruction according to the LIEP report (U.S. Department of Education, 2012), was rated low in presence in TeacherTube and YouTube videos. Nearly three-quarters (71.5%) of the TeacherTube videos did not refer to feedback at all and 60.8% of the YouTube videos did not either. Cultivating student relationships is a very important aspect of quality ELL instruction according to several scholars and teacher practitioners (Good et al., 2010; Leung, Davison, & Mohan, 2013; Webster & Valeo, 2011). Yet, this area had the lowest presence in TeacherTube videos (25%) and YouTube videos (28.5%). The content quality of these videos demonstrates that there are only small differences between what the literature suggests and what is present. This does not match what scholars say about YouTube videos reportedly being inaccurate and unreliable for learning (Fernandez et al., 2011; Marks, 2013; Stohlmann, 2012). However, it does support academic assertions that YouTube videos are limited in content quality, since most of the videos have limited content quality presence (Gilroy, 2010; Jaffar, 2012; Snelson, 2011a).

Perhaps one of the reasons why so many videos included vocabulary and so few did on feedback is because teaching students vocabulary is the first step in English language instruction. Before feedback can be given, teaching students new concepts must first occur. Furthermore, teaching students vocabulary is often done in the context of the content area being covered. This is perhaps why content-based instruction was the second highest area covered by the videos. Although grouping, metacognitive strategies, scaffolding, feedback, and cultivating student relationships are critical aspects of effective English language learning, such areas require a higher level of teacher effort and preparation in instructional design. Therefore, it may make sense that videos would cover vocabulary and content-based teaching than the more complex layers of incorporating metacognitive strategies, scaffolding, effective feedback, and cultivating student relationships.

Furthermore, the different levels of presence for each content quality variable in the TeacherTube and YouTube videos suggest a limitation in video as an instructional medium. Some strategies are easier to explain and model through video than others. For example, discussing ways you can teach vocabulary through the use of a graphic organizer, jigsaw activity, or with the use of material objects may be much easier than demonstrating how to give students feedback. Since giving timely and explicit feedback is based on the varied student performance levels and tasks, it may take more coordination and thought to explain and demonstrate. Rather than just talking through an activity, an explanation on feedback may require staging students engaged in an activity showing subsequent feedback, or thinking of principles that make up how to give good feedback to discuss. A strategy such as cultivating student relationships may have similar challenges. Since creating relationships varies and is specific to student personality, school and community culture, a video explaining such a strategy may take additional time to plan and execute. Rather than demonstrating a class activity, the video would need to explain generalized principles in feedback or relationship building or highlight successful case studies. While creating such video is not too challenging, it does take skill and care to plan, execute, and edit.

The findings of this study show that TeacherTube and YouTube are decent sources and good starting places for learning strategies to support English language instruction. This is particularly true for strategies that incorporate vocabulary, scaffolding, and content-based

instruction. Since all strategies are present in some way, watching videos on these sites will allow for exposure and introduction to the different aspects important to ELL instruction. Additional resources should be used to delve deeper in these areas and get a structured concept of effective ELL instruction. Once a solid framework for ELL instruction is obtained, TeacherTube and YouTube videos seem to be a good way to see examples and hear practitioners share first hand experience using the different strategies.

RQ2: Design Quality

TeacherTube and YouTube videos in general had moderate to high design quality ratings in regards to the framework for assessing instructional video by Morain and Swarts (2012). TeacherTube videos scored mostly well. At least three quarters of all videos received at least a moderate quality rating in all the design indicators. TeacherTube and YouTube videos tied each other for the percentage of videos moderately to extensively covering the design quality indicator accuracy (96.4%). Aside from the accuracy indicator, TeacherTube outperformed YouTube in the number of videos with the audio, timing, organization, pertinence, and self-efficacy design indicators rated moderately to extensively. YouTube outperformed TeacherTube in regards to the number of videos with moderate to extensive ratings in viewability, confidence, and engagement. However, YouTube mean averages for each design indicator were higher than TeacherTube in all areas except for accuracy, in which their mean scores were the same. This may be due to the fact that videos in YouTube had a higher proportion of extensive ratings compared to TeacherTube where rating were more often moderate.

The relatively high design quality ratings may seem to contradict the literature suggesting that YouTube needs higher quality control when used as a tool for learning (Gilroy, 2010; Jaffar, 2012; Snelson, 2011a). However, most studies done on the quality of videos on YouTube are in regards to science-based content, requiring sharp accuracy with terminology (Fernandez et al., 2011; Jaffar, 2012; Marks, 2013; Stohlmann, 2012). Overall, most of these studies verified the educational value that existed still with YouTube because they engage learners and supplement their learning (Fernandez et al., 2011; Jaffar, 2012; Marks, 2013; Stohlmann, 2012).

The esign quality of these videos, therefore, may not be surprising in that they are good sources for supplementing learning and engaging students. That YouTube mean scores are a bit

better than TeacherTube mean scores is also not surprising given that many more people use YouTube. Because YouTube does not focus its user-demographic primarily to teachers, a wider audience is welcome to view its videos. Therefore, those who post on YouTube know their videos are accessible by anyone, not just a teacher community. Making sure video is understandable and engaging to anyone, not just teachers, may be the reason why video quality is a bit better on YouTube. Also, because of YouTube's larger clientele, more videos are available to sift through, allowing for a greater number of high quality videos to be discovered. Therefore, YouTube may be a better source for finding quality video than TeacherTube because it is easier to select quality video and encounter a wider range of strategies.

RQ3: User Ratings

The user behaviors on each of the video sharing sites were consistent with findings from several other studies reporting that 20% of users take time to rate and comment after watching videos (Lin & Michko, 2010; Lin, Michko, & Bonk, 2009; Madden, 2007). Less than 10% of the TeacherTube videos analyzed received any likes, dislikes, or direct user ratings. On the other hand, YouTube user ratings and views were a bit more sizeable with more than half (64.3%) receiving at least one like. Only 32% of YouTube videos received comments, which interestingly enough were all positive. The comments were mostly expressions of validation for the significance of each video, while a handful expressed thanks for the video.

With the low number of ratings and comments, the measure of user ratings for TeacherTube videos was restricted to the number of views for each. This is a limitation of the study since it may not be a valid assumption that the number of views reflects higher user ratings. YouTube videos in general, received a wider range and three times the number of views than TeacherTube videos. Twice the number of YouTube videos (57.2%) had 0-1000 views than TeacherTube videos (28.6%). TeacherTube had more than four times the number of views (32.1%) ranging from 1001-2000 than YouTube (7.1%). This trend continued with TeacherTube having twice the number of views than YouTube ranging from 2001 to 5000. Then, for the very highest number of views (over 5000), YouTube videos (21.6%) had six times that number of views compared to TeacherTube videos (3.6%). Even if the percentage of all YouTube viewers

watching video for ELL instruction is relatively low, the amount of YouTube views is still greater than that of TeacherTube.

The wider range of user ratings for YouTube than that of TeacherTube is not surprising given the larger number of videos uploaded and broader population of viewers on YouTube (TeacherTube: Knowledge Base, 2015b; YouTube, 2014b). Though the total number of YouTube views did surpass those of TeacherTube, the number of views was more consistent from video to video on TeacherTube. Perhaps the relatively smaller number of videos on ELL instruction is the reason TeacherTube views on any given ELL related video would be similar in number. In contrast, the number of YouTube views would highly fluctuate since a greater amount of video on any given topic is uploaded daily. Therefore, because there are more videos to navigate and select on the topic of ELL instruction, some video may have very little views, while others may have much more.

Furthermore, the lack of recent videos on TeacherTube suggests that TeacherTube may be a declining resource. Most YouTube videos analyzed were published within the year suggesting that YouTube is continually growing and sustaining as a popular resource for video consumption.

RQ4: Relationships between Quality and User Ratings

Taking a closer look at the relationship patterns that may or may not exist between the quality ratings (content and design) and user ratings, there are many unexpected and a few expected findings. To answer this question, this section will report on both the correlations between user ratings and the two quality indicators (content and design) as well as the correlations between content and design quality.

Relationships Between User Ratings and Content and Design Quality

A few negative correlations surfaced between user ratings and content and design quality ratings. One significant negative correlation exists between quality ratings for scaffolding presence in the video and number of likes in YouTube videos at $r = -.40$. Negative correlations also lie in the combined TeacherTube and YouTube ($n = 56$) video analysis between the number of views and content quality ratings in two areas (vocabulary: $r = -.26$ and scaffolding: $r = -.28$). One possible explanation for this negative relationship is that there were so many videos that

referred to scaffolding and so few videos that received views and likes. Perhaps views were low for the scaffolding videos because teachers were not as interested in that topic or perhaps teachers consider scaffolding a topic that is not as easy to learn in a video. This is interesting since scaffolding had the most significant correlations with the different design quality indicators (cognitive: r = .30, affective: r = .36, and overall design quality: r = .26) indicating that high content quality related to scaffolding was also related to overall high design quality. There may be a negative correlation with vocabulary and views because the number of video covering vocabulary far exceeded its number of views.

There was one significant positive correlation between user views and design quality. A weak but positive correlation between user views and affective design (r = .26) indicating videos users watched were likely to have slightly higher affective design principles embedded. This may be because viewers tend to enjoy video with engaging content and confident, reassuring narration.

While none of the TeacherTube videos had any dislikes and only four YouTube videos had at the most two dislikes, over half of all the YouTube videos had at least one like. Furthermore, almost one third (32.1%) of the YouTube videos received 18 comments, all of which were positive, either expressing thanks for or validating the content of each video. Perhaps a reason there were only positive comments for the YouTube video is that the viewers were genuinely grateful of the posts. Another reason could be that video posting was part of a pre-service or in-service ELL teacher course and responding to a classmate's post was required.

Scholarly articles report that the use of YouTube for teacher based learning support is often highly structured and focuses on training pre-service teachers to collaborate and practice reflecting regularly as professionals (Bauer, 2010; Abendroth et al., 2012; Vogt-Schuller, 2014). This trend may explain why there is a tiny amount of individuals viewing, commenting, and liking video on YouTube or none at all on TeacherTube. Posting to these video-sharing sites may simply be part of an assignment in a pre-service or in-service teacher training. Either way, fostering collaboration and reflective practice in the teaching profession is an effective way to build professional development and learning communities for educators (Bauer, 2010; Abendroth et al., 2012; Vogt-Schuller, 2014) and is needed for teachers to continually develop their practice in face of its ever changing demands (Webster & Valeo, 2011; Brancard &

Quinnwilliams, 2012; Hansen-Thomas et al., 2013; Kabilan et al., 2011; Kim et al., 2012; Pawan & Ortloff, 2011; Russell, 2012; Schneider et al., 2012; Short & Boyson, 2012; Short et al., 2012; Verplaetse et al., 2012; Walker & Edstam, 2013). Although there seems to be no correlation between user views and content or design quality, there is an evident practice of collaboration and interaction between practitioners in the videos analyzed.

Relationships Between Content and Design Quality

Analysis found correlations between various content and design quality indicators. The physical aspect of instructional video design (accessibility, viewability, and timing) was weakly correlated with cultivating student relationships ($r = .29$). The cognitive aspect of instructional video design (accuracy, completeness, and pertinence) weakly correlated with scaffolding ($r = .30$) and content-based instruction ($r = .27$). The affective aspect (confidence, self-efficacy, and engagement) of instructional video design was moderately correlated with cultivating student relationships ($r = .40$). Lastly, the overall design quality rating was correlated, however weakly, with scaffolding ($r = .26$), content-based instruction ($r = .27$), and cultivating student relationships ($r = .30$). While no connections may exist between these findings and the literature, the correlations suggest that there are instructional videos on YouTube and TeacherTube that possess quality content and design characteristics. Furthermore, the correlations between overall content and design quality ratings with each other ($r = .39$) attest to the existence of a moderate relationship between quality content and design quality in YouTube and TeacherTube videos for ELL instruction. In other words, those videos with better content quality were also more likely to have better design quality. Once again, this contradicts literature suggesting many YouTube videos are inaccurate (Fernandez et al., 2011; Gilroy, 2010; Jaffar, 2012; Marks, 2013; Snelson, 2011a; Stohlmann, 2012), but confirms they have limited quality for learning (Clifton & Mann, 2011; Murugiah et al., 2011; Jaffar, 2012; Raikos & Waidyasekara, 2013; Rossler et al., 2012). The correlations between content and quality ratings signify that video with quality content and design do exist on TeacherTube and YouTube. Furthermore, video-sharing sites such as TeacherTube and YouTube can be a reliable source of information for self-directed learners.

There were several correlations of similar strength between the content quality indicators. Scaffolding is moderately correlated with grouping ($r = .31$) and metacognitive strategies ($r = .32$). Grouping presence has a correlation of moderate strength with feedback ($r = .31$).

Content-based instruction is correlated with vocabulary (r = .26), and student relationships with feedback (r = .28). The correlations discovered connect to the literature in the way they complement one another to support effective English language learning. Grouping is often used as method for providing student feedback (U.S Department of Education, 2012). As students interact with their peers, particularly those with various skills, they challenge themselves and progress ideally as they gain mastery (U.S Department of Education, 2012). Content-based instruction also, is the best way for students to acquire their language and build vocabulary (U.S Department of Education, 2012). Connections between student relationships and feedback are reflected in the literature specifically with how important it is to be mindful of student strengths and weaknesses when giving feedback (U.S Department of Education, 2012).

Relationships Between Views and Upload Date

The moderate to weak correlation between video views and its upload date suggests that the number of views is not the best measure of user rating. Instead, the views may have less to do with learner preferences and more to do with the passing of time. Of course, the longer time a video is published, the more likely it is to accumulate views. According to Brian Dean (2016), a search engine optimization (SEO) expert and founder of international SEO company—Backlinko, YouTube SEO is based on a number of factors. YouTube collects data on the view duration a video receives (data gathered by YouTube), the number of subscribes a channel receives after watching a video, shares, and more (Dean, 2016). These factors and more determine whether a video populates at the beginning of a particular search, which of course will lead to receiving more views. Interesting enough, the correlation between TeacherTube video views and upload date was insignificant, while the correlation between YouTube views and upload date were significant and moderately strong (r = .40). That TeacherTube views did not correlate with upload date may be further evidence that TeacherTube is declining as a resource for online learning and collaborating.

Implications for Theory

Findings confirm the LIEP report suggestions that ELL instructional strategies are widely varied and work best complementing one another (U.S. Department of Education, 2012). The correlations between content quality indicators and the presence of them all in the TeacherTube

and YouTube videos support the theory that there is no one strategy most important or effective for ELL academic growth (U.S. Department of Education, 2012).

Furthermore, according to the LIEP report, second language acquisition, particularly vocabulary building, is most important in supporting ELLs, second finding ways to provide feedback, third scaffolding instruction, and lastly doing so in different content areas (U.S. Department of Education, 2012). The study's findings of a strong presence of vocabulary based instruction in the TeacherTube and YouTube videos compared to the other content quality indicators support that theory. After vocabulary, scaffolding and content-based instruction have a strong presence in the videos also supporting the LIEP report's recommendations.

The user behavior data here does not corroborate with findings suggesting students' sensitivity to accurate content (Halverson et al., 2010; Hsieh & Tsai, 2014; Tseng, et al., 2014; Tsai et al., 2012), but may relate to other studies showing users select resources for other reasons. Clements and Pawlowski's (2012) survey study finding that 89% of teacher-learners select content from browsing and 82% from peer recommendation may be a better explanation for how most of the viewers chose to watch the videos they did. Clements and Pawlowski's (2012) findings also align with other studies reporting that a high percentage of YouTube users watch and share videos with friends (Lin, Michko, & Bonk, 2009). Perhaps one reason there is a positive correlation between user views and the affective area of design is because videos with high affective quality will be more engaging and personable. This makes sense as people learn more deeply when information is presented in a conversational way, appealing to the learner's emotion and self-efficacy (Clark & Mayer, 2011). Or perhaps they simply watched those that showed up at the top of the list following a search rather than digging further into the content. Therefore, in regards to Bouchard's (2009a) algorithmic area of learner control, findings suggest that most viewers do not select resources that are of good content quality but rather, select resources that have videos with confident, reassuring narrators and engaging content.

Overall, the TeacherTube and YouTube user data represent a general population of viewers rather than those who carefully select their resources based on accuracy. The types of learners able to choose information most accurate to the knowledge they gained are those who have higher cognitive ability and greater working memory capacity (Hseih & Tsai, 2014; Halverson et al., 2010; Mason et al., 2010; Tsai et al., 2012; Tseng et al., 2014). Perhaps the

careful selectors of accurate resources represent a smaller minority anyway. At least for the videos analyzed, data showed a decent representation of ELL strategies, so that users are getting good content in their selection of resources. The correlation between views and video affective quality may reflect viewers seeking sources based on the results of practices used by peers rather than the content's alignment with literature on effective ELL teaching. Therefore selecting video based on his or her peer confidence and experience would be more appealing for a self-directed learner professional to view.

More theory on the production of quality content and design for instructional video sharing may be helpful. While there is much scholarly work on the instructional design aspect of video with regard to multimedia design and cognitive load theory (Clark & Mayer, 2011; Kay, 2012; Mayer, 2014; Morain & Swarts, 2012; Thomson et al., 2014), few exist on aspects specific to video consumed online through public sharing sites. That video online is largely used to watch and share with peers and that a relationship between the affective design aspect and number of views was discovered, suggest a need for theory beyond minimizing cognitive load for best instructional design practices. Perhaps focusing on the production process in creating instructional video including the understanding of search engine optimization would help improve the quality of educational content on video sharing and free online resources.

Implications for Practice

The correlation between content and design quality and the user data collected substantiate video-sharing sites can be effective venues for self-directed learning and community building. Although not recommended for use in isolation of other learning resources, they do possess quality content and design (Gilroy, 2010; Jaffar, 2012; Snelson, 2011a). Furthermore, collaboration and reflective practice in the teaching profession are present. One-third of all the YouTube videos analyzed had positive comments from other users demonstrating that a budding professional learning community does exist in online sharing sites. Teachers post videos regularly and may find other practitioners who validate and support their work. This online sharing of high quality videos can address a need for teachers, particularly those who seek support in teaching ELLs, by providing an additional resource and community to improve their practice.

Since various elements of the LIEP report and framework for assessing design quality were well represented in YouTube and TeacherTube videos, self-directed learners may exercise limited trust in the content and design quality of YouTube and TeacherTube video as a resource for learning strategies for teaching ELLs. One suggestion is to follow recommendations by scholars (Jaffar, 2012; Snelson, 2011a) to seek resources relevant to education such as using "#Education" when searching on YouTube. Another suggestions is to seek new ways for viewers to interact with posted video that may be worthwhile, the third highest purpose for online viewer use is education, after entertainment and receiving news (Purcell, 2010). Still, perhaps this indicates that the need for facilitators in the learning process persists and that online learning cannot replace face-to-face or human facilitated instruction. After all, strategies such as cultivating student relationships and giving effective feedback could use guided training and support by an experienced practitioner.

Furthermore, while accessibility to technology makes it easier to consume information, designing and creating that information effectively is a learned skill that comes through experience and training (Hicks & Turner, 2013). While there is much scholarly work on the qualities of quality instructional video, none discuss the technical aspects of producing a video, requiring pre-planning, proper equipment, and careful execution during and after production (Clark & Mayer, 2011; Kay, 2012; Mayer, 2014; Morain & Swarts, 2012; Thomson et al., 2014). That some instructional strategies for teaching ELLs were not well represented may be caused by a limited proficiency in demonstrating ideas through video. While feedback and cultivating student relationships were no less important than vocabulary and scaffolding for ELL instruction, they were the least represented in the YouTube and TeacherTube video analyzed. Whether or not this was the result of limited skill in video production of such concepts, the growing popularity of video sharing sites signal a demand for increased training to support quality video creation.

Ultimately, tapping into YouTube and TeacherTube or other free and accessible resources for educational purposes calls for increased public digital and media literacy (Hicks & Turner, 2013). Understanding video's impact and crafting it skillfully to instruct audiences may improve the educational quality of online resources for learning. Additionally, media literacy may increase the number of viewers that search, like, and share for video with quality content

and design. Therefore, video designers may be more accountable and produce video for quality instruction. Such could contribute to the development of teacher and public skill in causes such as supporting English language learning.

Finally, self-directed learners may expect higher quality instructional video from YouTube. YouTube videos rated higher than TeacherTube in overall content and design quality measures. A higher margin of content quality means was present in YouTube videos than TeacherTube videos. This is also true of YouTube videos in design quality means except for audio.

Limitations

Limitations of this study include the use of TeacherTube and YouTube itself. The TeacherTube and YouTube search tool allows for a more systematic method of filtering videos, however, it is not a refined tool. For example, when displaying results, the number of results displayed on the search window does not match the actual number of videos. This glitch suggests that the search tool is not a completely reliable tool and videos that result may not reflect a true census of the total videos that could potentially match the search phrase. If so, there could be more videos that would be worth analyzing that would not be included.

Second, this study does not collect data to know the nature of the TeacherTube and YouTube user and if that user is representative of teachers in general. It is also recognized that not all users evaluate a learning resource in the same way. Consequently, for example, a rating of four stars from one user may not have the same meaning as a rating of four stars from another user. In addition, number of views may not be an accurate reflection of user perceptions of the quality of the videos. This is further substantiated by the correlation found between the moderate to weak correlation between video views and its upload date. Of course, the longer time a video is published, the more likely it is to accumulate views. Search engine optimization (SEO) also determines which videos populate when a user searches for information. Expert Brian Dean explains that content uploaded to YouTube should consider data on the view duration a video receives (data gathered by YouTube), subscribes a channel receives after watching a video, shares, and more to aid in whether a video populates when searching for information (2016). Negative correlations between views and quality ratings indicate that these and perhaps other

limitations intervene in discovering possible relationships between YouTube and TeacherTube video user and quality ratings.

Third, this study does not include other sources of online video aside from TeacherTube and YouTube. There may be other videos on other sites that offer quality instruction on providing tips for teaching ELLs. This report does not reflect such a population of videos.

Fourth, as indicated by the LIEP report itself, there is a lack of sufficient evidence to support all strategies in the report as effective practices (U.S. Department of Education, 2012). This is also true for the characteristics of quality instructional video. The LIEP report is being used because of its depth of analysis and breadth of studies included. However thorough the report is, it still may not include every single strategy that can effectively be used in ELL teaching. Lastly, the framework for assessing instructional online video developed by Morain and Swarts (2012) is not all-inclusive. Other theories exist and may differ in identification of aspects of high quality instructional design.

Recommendations for Future Research

Given that YouTube had higher content and design quality ratings, relevant information may be found by exploring other YouTube videos targeted to education and teachers. Subdivisions of YouTube specific to education include #Education on the YouTube and a site path youtube.com/user/teachers.

Secondly, user ratings were minimally present and using likes to measure viewer preferences may have compromised findings. There are a number of ways future research could better identify how users interact and select video for learning. A few studies investigated showed many users are simply referred via social networking and through interaction with friends face-to-face (Lin & Michko, 2010; Madden, 2007). For example, looking at video shares or other social networking tools might be a better indicator as well as factoring the time a video has been published to increase the validity of user preference measures. Generally speaking, understanding YouTube or any online resource's search engine optimization is important to consider in measuring user preferences. Getting a more direct measure of user ratings could help to validate or contradict the findings of this study.

More studies on publicly accessible online resources would be helpful in general to continually assess its quality for self-directed learner use. Seeing that YouTube videos are mostly of moderate to high quality design, exploring other content areas where it can be used as an educational resource and tracking its effectiveness would give insight as to how such technology is used for self-directed learning. Also, developing theory and pursuing the education of quality video production for the general public would likely improve the quality of media consumed online—including instructional video. It is important that such includes media for online sharing consisting of understanding search engine optimization, visual storytelling appealing to a viewer's affect, and cognitive load theories for paced, sequenced, clear, modeled, and pertinent instruction.

APPENDIX A: DATA COLLECTION MATRIX

No	***Title***	***Length (Time)***	***Author***	***Yrs ago posted***	***Link***	***Type of Video***	***Date located***	***# of views***	***# of dislikes***	***# of likes***	***Overall rating***	***# of + comm.***	***# of – comm.***	***Comm .transc***
8	*Jigsaw Strat.*	*2: 27*	*Nilce Johnson*	*5*	*https://www.youtube.com/watch?v=eOXWdADUgW8*	*2*	*5/1/16*	*6736*	*0*	*10*	*N/A*	*1*	*0*	*It seems to work.*

APPENDIX B: CODEBOOK VARIABLES

Coding for LIEP Recommended Strategies (Content Quality)

Variable	Strategy Present/ Not Present?	If Present, extent aligned with LIEP Score (1-3)
1. Vocabulary instruction and word recognition Any practice that encourages student input and retention of new English vocabulary, including but not limited to the use of L1 [first language], knowing meaning of basic vocabulary words, review and reinforce vocabulary, providing definition and context information of vocabulary word meaning, using multiple exposures to vocabulary word and its meaning, word analysis, balancing lower and higher level vocabulary, incorporation of vocabulary instruction throughout the day and across subjects, and phonemic word learning (U.S. Department of Education, 2012).		1: Only 1 technique used from variable description 2: 2 techniques used from variable description 3: 3+ techniques used from variable description
2. Grouping and oral interaction Any practice that allows ELLs to be a part of groups or engage in oral interactions with other ELLs, English speaking peers,		1: Video suggests grouping for student oral interaction 2: Video suggests grouping for oral interaction with student advancement 3: Video suggests grouping for

and instructors that are structured well for equal and appropriate participation and allow for ELLs to join new groups that continually challenge fluency without destroying student confidence (U.S. Department of Education, 2012).	oral interaction with student advancement & explicit use of feedback looping in instruction
3. Metacognitive strategies Any practice that "directly [teaches] learning strategies to help students attack language or content tasks". Helps students focus on the process: including "previewing & background building, self questioning and setting vocabulary priorities (during), and summarizing and concept mapping (after)." Clear objectives for each lesson. Metacognitive strategies used here with reciprocal teaching: including "summarizing, clarifying & predicting, in collaborative small-group discussions." (U.S. Department of Education, 2012, p.75).	1: Only 1 technique used from variable description 2: 2 techniques used from variable description 3: 3+ techniques used from variable description
4. Feedback Any practice that provides students with "direct and explicit feedback" as students complete learning tasks (U.S. Department of Education, 2012, p.75).	1: Video suggests giving students feedback. 2: Video suggests giving students immediate/direct or detailed/explicit feedback. 3: Video suggests giving students immediate/direct and

	detailed/explicit feedback, while students are performing learning task.
5. Scaffolding Any practice "in which teachers guide student learning by providing structures or frameworks that are gradually removed," including but not limited to visual scaffolds, writing scaffolds, vocabulary scaffolds, oral scaffolds, and content related scaffolds through modeling, bridging, contextualizing, building schema, representing text and developing metacognition. Also includes Response to Intervention practices responding to student needs based on assessment results and uses student motivation. Use of native-language to help scaffold English learning. (U.S. Department of Education, 2012, p.75).	1: Only 1 technique used from variable description 2: 2 techniques used from variable description 3: 3+ techniques used from variable description
6. Content based instruction Any practice in which students learn subject related content and may learn language as part of the process (U.S. Department of Education, 2012).	1: Only 1 technique used from vocabulary instruction, grouping & oral interaction, teaching and learning strategies, feedback, & scaffolding variables. Not well integrated with content instruction. 2: 1+ techniques used from used from vocabulary

	instruction, grouping & oral interaction, teaching and learning strategies, feedback, & scaffolding variables. Techniques somewhat integrated with content instruction. 3: 1+ techniques from used from vocabulary instruction, grouping & oral interaction, teaching and learning strategies, feedback, & scaffolding variables. Techniques well integrated with content instruction.
7. Cultivating Student Relationships Any demonstration of classroom culture being important between learner, teacher, and learners themselves. Teacher puts genuine effort to get to know each student and create classroom environment that respects their needs, celebrates diversity and appreciates them and their social/heritage culture.	1: Only 1 technique used from variable description 2: 2 techniques used from variable description 3: 3+ techniques used from variable description

Coding for Video Instruction (Morain & Swarts, 2012) (Design Quality)

Variable	Score
Physical Design 1. Audio	1: Voice over is present but is hardly used. If no voice over is used, indistinct sound, or no audio track. 2: Voice over is present but not specific to main points of video. If no voice over used, audio has some mic or sound issues. 3: Voice over is present and helps listener understand clearly what to pay attention to. If no voice over is used, clear and strong audio.
2. Viewability	1: Illegible view with no HD. 2: Video not cropped/edited to include just relevant information. Some parts HD. 3: Video is tight visually and voice overs used to highlight relevant details. HD video.
3. Timing	1: Consistently too fast/slow timing. Requires frequent pausing or fast forwarding. 2: Some parts overly fast or slow. 3: Conversational pacing.
Cognitive Design 4. Accuracy	1: Video consistently filled with errors, failed and forgotten steps, often not corrected and ignored. 2: Video errors are common but corrected or acknowledged. 3: Video has no errors, little errors if any are corrected immediately.
5. Organization	1: No announcement of purpose or goals of video. 2: Purpose revealed but not consistently, structure unclear. 3: Clear structure with topics & headings.
6. Pertinence	1: Narrator omitted important details, lots of pauses, dead air, and irrelevant information/music. 2: Narrator spent less time explaining steps and extra details were not on task. 3: Narrator took time to explain steps and extra details explained enhance understanding.

Affective Design	1: Poorly planned explanations, contains backtracking, pauses, and repeated actions. Credibility comments nonexistent. 2: Smoothness apparent, but still contains tangent remarks. Credibility hardly mentioned. 3: Narrator well scripted and rehearsed, takes time to introduce self and credentials.
7. Confidence	
8. Self-efficacy	1: Narrator sounds inexperienced, not inspiring confidence, less explanation & more errors. 2: Narrator makes assumptions of viewer's knowledge not taking time to explain, makes less reassurances of task's achievability. 3: Narrator presented self as a peer, stayed on task, and reassured viewers task was achievable.
9. Engagement	1: Narrators monotonous, sarcastic, immature, no learning expectations. 2: Narrators inconsistent but at times conversational. Learning expectations sometimes stated and fulfilled. 3: Narrators were conversational and enthusiastic, created learning expectations and fulfilled them.

APPENDIX C: CODEBOOK AGREEMENT SCORES

LIEP Recommended Strategies (Content Quality)

Variable	Round 1 Agreement Score	Round 2 Agreement Score
1. Vocabulary instruction and word recognition	1	.9
2. Grouping and oral interaction	1	.9
3. Metacognitive strategies	1	1
4. Feedback	1	1
5. Scaffolding	.75	.9
6. Content based instruction	.75	.9

Video Instruction (Morain & Swarts, 2012) (Design Quality)

Variable	Round 1 Agreement Score	Round 2 Agreement Score
Physical Design		
1. Audio	-0.25	.9
2. Viewability	.75	.9
3. Timing	.75	.9
Cognitive Design		
4. Accuracy	1	1
5. Organization	.75	.9
6. Pertinence	1	1
Affective Design		
7. Confidence	.75	1
8. Self-efficacy	.75	1
9. Engagement	.75	1

APPENDIX D: DATA AGREEMENT SCORES

LIEP Recommended Strategies (Content Quality)

Variable	Agreement Score
1. Vocabulary instruction and word recognition	.9
2. Grouping and oral interaction	1
3. Metacognitive strategies	1
4. Feedback	.9
5. Scaffolding	.8
6. Content based instruction	.9
7. Cultivating Student Relationships	.9

Video Instruction (Morain & Swarts, 2012) (Design Quality)

Variable	Agreement Score
Physical Design	
1. Audio	.9
2. Viewability	.8
3. Timing	.8
Cognitive Design	
4. Accuracy	1
5. Organization	.9
6. Pertinence	.8
Affective Design	
7. Confidence	.9
8. Self-efficacy	1
9. Engagement	1

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